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ABSTRACT

This report presents initial results of the first phase of the Treatment Outcome Prospective Study (TOPS) a longitudinal investigation of the natural history of persons identified as eligible for treatment at selected federally-funded drug treatment programs in 1979-1981. The materials describe the characteristics, behavior, and intreatment outcomes of 3,389 treatment clients in 27 drug treatment programs in 6 cities in 1979. The analyses contain a basic description of the clients' characteristics and behaviors in the year prior to treatment and during their first year in treatment. A literature review, the research methodology, and several chapters reporting basic descriptive results on demographic and lifestyle variables are presented in terms of: (1) alcohol and drug use patterns, associated problems, and treatment; (2) mental health and treatment patterns; (3) illegal activity and criminal justice involvement; and (4) employment- and income-related activities. Data on treatment program services and client satisfaction with the services are highlighted along with the effects up to 12 months after treatment on the selected outcome measures of alcohol use, drug use, depression, illegal activity, and employment. The report concludes with a brief summary of major findings and suggestions of tentative implications. (Author/NRB)

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Client Characteristics, Behaviors and Intreatment Outcomes
1979 TOPS Admission Cohort

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Dr. Harold M. Ginzburg, Chief of NIDA's Clinical/Behavioral Branch, is the TOPS project officer. J. Valley Rachal, Deputy Director for the Center for the Study of Social Behavior, is the RTI project director for all phases of the TOPS project. Dr. Robert L. Hubbard, Senior Social Psychologist, has served as Associate Project Director for the TOPS program.

The data presented in this report are based on interviews at admission and during treatment with drug abuse treatment clients in the 1979 TOPS cohort.

Comments or suggestions regarding this document are welcome. Additional analyses of the TOPS data are underway; reports will be available in the near future.

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ABSTRACT

The Treatment Outcome Prospective Study (TOPS) is a longitudinal investigation of the natural history of persons identified as eligible for treatment at selected federally funded drug treatment programs in 1979-1981. The present report describes the characteristics, behavior, and intreatment outcomes of 3,389 treatment clients in 27 drug treatment programs (three outpatient detoxification, eight outpatient methadone, seven outpatient drug free, and nine residential) in six cities in 1979.

The treatment programs and individual clients have voluntarily participated in the study. Program researchers, hired and trained specifically for TOPS, were assigned to interview the clients. Demographic and baseline behavioral data were collected at the time the client sought admission to the treatment program. At months one, three, and quarterly thereafter, for up to two years while the client remained in treatment, additional indepth assessments of behavior, attitudes, and treatment process were conducted. For a sample of the 1979 admissions, assessments are being continued in the posttreatment period by followup interviews one year and two years after termination.

The analyses of the current report are a basic description of clients' characteristics and behaviors in the year prior to treatment and during their first year in treatment. These analyses provide detailed information on key variables that will be used to examine issues and hypotheses in subsequent multivariate analyses.

In general, results showed that characteristics and behaviors of TOPS clients are similar to those of the general treatment population. There are, however, many differences among clients in the treatment modality/environments that must be considered in any comparisons. Pretreatment characteristics and behaviors can be roughly summarized in six major points.

- Most clients are males (72 percent), non-Hispanic whites (52 percent), 30 years of age or younger (71 percent), and without high school diplomas (51 percent).

- Clients frequently used a variety of drugs and alcohol in the year prior to treatment. Regardless of treatment modality, the majority of clients reported weekly or more frequent use of alcohol (57 percent) and marihuana (65 percent). Heroin was used weekly or more often by a large majority of clients in detoxification (85 percent) and in methadone programs (63 percent) but less frequently in drug free (12 percent) and residential programs (33 percent). Heroin was most often reported as the primary drug of abuse (43 percent). Overall 77 percent of the clients used their primary problem drug weekly or more often and 57 percent used it daily. The data show considerable use of multiple drugs; compared to previous studies, fewer of the TOPS clients reported using only heroin.

- A large proportion of clients previously participated in drug treatment. Detoxification (76 percent) and methadone programs (69 percent) had the highest proportions followed by residential (50 percent) and drug free programs (37 percent).

- Most clients (60 percent) reported indicators of depression. One of six clients in outpatient drug free and residential programs reported a suicide attempt in the year prior to treatment.

- Many clients were involved in illegal activity and in the criminal justice system. Arrests reported for all offenses during the year before treatment were highest among residential clients (69 percent) followed by drug free clients (43 percent), detoxification clients (31 percent), and methadone clients (30 percent).

- The clients have not been successful in finding and keeping jobs. Full-time employment for the entire 52 weeks prior to treatment was reported by only 19 percent of methadone clients, 14 percent of detoxification clients, 10 percent of drug free clients, and 4 percent of residential clients.

Clients' drug related problems, service needs and treatment services provided by programs were also examined. Clients entering treatment often reported medical, psychological, family, legal, job/employment, and/or financial problems. Between 40 and 60 percent also reported needing services in each of these areas. Although treatment programs offered services in these areas, in general the proportion of clients' reporting receipt of a service was considerably lower than the percentage expressing a need for the service. The services received were evaluated positively by clients both early and late in treatment. Similarly, clients were rather uniformly satisfied with their drug abuse treatment.

Various major behaviors were examined during treatment and compared with pretreatment behaviors. Three major points summarize these analyses.

- Retention varied among types of clients and modalities/ environments. Methadone programs had considerably more clients (51 percent) staying in treatment six months or more than did residential (22 percent) or drug free programs (17 percent).

- Drug related problems including medical, psychological, family and employment were substantially reduced during treatment. The largest decreases in reports of problems were observed between the 12 months prior to treatment and the first three months during treatment for residential (84 percent to 20 percent), drug free (75 percent to 32 percent), and methadone (81 percent to 27 percent) programs.

- Negative behaviors (drug use, illegal activity) and depression decreased substantially during treatment and positive behavior (employment) increased. For example, clients' use of their primary drug during the first three months of treatment was considerably less than it was during the 12 months before treatment. Decreases in use occurred in methadone (79 percent to 10 percent), drug free (53 percent to 30 percent), and residential (76 percent to 2 percent) treatment programs. Overall negative client behaviors were greatly reduced during the first three months; similar levels were maintained throughout treatment.

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FOREWARD

This report presents initial results of the first phase of the Treatment Outcome Prospective Study (TOPS). The development of TOPS commenced in the Fall of 1975. The Intreatment data collection phase began in January 1979, and the Followup data collection phase started in January 1980. TOPS has become a significant and critical cornerstone in the research efforts of the National Institute on Drug Abuse (NIDA) to describe and understand the nature and dynamics of treatment outcomes for clients entering the drug abuse treatment modalities and environments available in this country.

The methodologies of TOPS were developed from state-of-the-art procedures for collecting, collating and analyzing data from large prospective samples. A successful investigation ultimately involving more than 12,000 clients in three different annual cohorts--1979, 1980, and 1981--TOPS provides a rich data base that may be used to address key questions about drug treatment and its effects. Many of these questions will be examined in future analyses and reports. Near future plans are to make available a set of data tapes for use by interested researchers.

This report, presenting descriptive data for the 1979 intreatment cohort, will be followed by other similar reports presenting data on admission cohorts for years 1980 and 1981 and on the followup samples. In addition, subsequent reports will present the results of more intensive, explanatory investigations of important issues and include the use of appropriate multivariate and time trend analyses.

TOPS has replicated the findings of earlier studies--clients show considerable improvement in several outcome measures while in treatment. Clients who remain in treatment longer show less criminal behavior, less drug using behavior, fewer depressive symptoms and improvement in employment. The extent of the changes and the extent of post-treatment recidivism will be addressed in later reports. An initial analysis, in this report, has attempted to examine the performance of clients in particular types of treatment modalities.

The successful development of TOPS has been dependent on the cooperation, energy and dedication of many individuals and groups. The staff at the Research Triangle Institute (RTI) has labored to develop and coordinate the numerous components of the study design and to insure that the data have been properly collected, processed and analyzed. Advisory groups have provided a broad perspective for planning, designing and conducting the study. State and local agencies and the directors and staff of the participating treatment programs have been extraordinarily cooperative and supportive of TOPS. The present director of the National Institute on Drug Abuse, Dr. William Pollin, and his predecessor, Dr. Robert L. DuPont, have strongly supported this study with their encouragement and with adequate funds.

It must also be acknowledged that this study would not have been possible without the dedicated work of the on-site program researchers. Their ability to gain the cooperation and confidence of the clients helped ensure the integrity of the TOPS data. Finally, and most importantly, the contribution of the participants must be recognized. Without their cooperation and information there would not have been a study.

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Characteristics, Behaviors and Intreatment Outcomes of Clients in TOPS -- 1979 Admission Cohort

I. INTRODUCTION

A. Overview

Drug abuse in the United States is a major social problem and, as such, has received the continued attention of both policymakers and researchers. Not surprisingly, numerous studies have been directed toward understanding the nature and patterns of drug use and the effectiveness of treatment programs. Most of these latter investigations, however, have been of limited scope (often focusing on individual treatment programs) and of limited generalizability due to sampling, design, and/or measurement shortcomings.

The last comprehensive data collection on a national level took place from 1969 to 1973 in the Drug Abuse Reporting Program (DARP). In the DARP research, baseline and intreatment data were gathered on over 44,000 clients who entered drug abuse treatment programs (Sells, 1974; Sells, 1975; Sells and Simpson, 1976). Subsequent followup studies were conducted on these cohorts approximately five years after clients began treatment (Simpson, Savage, Lloyd and Sells, 1978; Sells, Demaree and Hornick, 1979). But the data from DARP are somewhat limited for current policy and program purposes. Since Sell's last cohort entered treatment in 1972-73, there have been rapid changes in the drug abuse problem--the nature, funding, and availability of treatment services, and the clients who seek treatment. Many questions about the background of clients who enter treatment, the nature, effects, and quality of the services provided and received, and the changes in behavior that occur both during and after treatment are unanswered.

All of this suggests the need for comprehensive, broad-based data about drug treatment programs, services, and clients to help guide the decisions of individuals working in the area of substance abuse. Policymakers, program directors, and clinicians need this information to assess the effects of programs and services on clients; researchers need it to formulate hypotheses about factors underlying the use of drugs.

Much of the information needed by policymakers, practitioners, and researchers can be provided by the Treatment Outcome Prospective Study (TOPS). Funded by the National Institute on Drug Abuse (NIDA) in cooperation with the National

Institute of Justice (NIJ), this research is aimed at providing timely data on treatment currently provided to individuals with drug problems. TOPS is a long term, large-scale longitudinal investigation of the natural history of drug abusers who have sought services in federally funded drug abuse treatment programs. This research tracks a multi-year census (1979-1981) of persons identified as eligible for treatment at selected drug treatment programs and by the Treatment Alternatives to Street Crime (TASC) programs.

The treatment programs and individual clients have voluntarily participated in the study. Program researchers, hired and trained specifically for TOPS, were assigned to interview the clients. Demographic and baseline behavioral data were collected at the time the client sought admission to the treatment program. At months one, three, and quarterly thereafter, for up to two years while the client remained in treatment, additional indepth assessments of behavior, attitudes, and treatment process were conducted. These assessments are being continued in the posttreatment period by followup interviews at three months, one year and two years after termination. Thus, the TOPS research program includes multi-cohort Intreatment and Followup Studies.

The data that are collected are used to:

(1) describe in detail the backgrounds and characteristics of drug abusers contacting selected treatment programs;

(2) examine variations in client behavior before, during and after treatment in the selected treatment programs;

(3) examine variations in behavior among groups of clients with selected background characteristics and experiences; and

(4) identify factors (e.g., demographic characteristics, treatment services) that explain differences and changes in major types of outcome behaviors (e.g., drug and alcohol use, criminality, employment) during and subsequent to treatment.

In general, the goal of TOPS is to provide a clear understanding of the complex social, economic and behavioral factors which, combined with the treatment experience, are associated with clients developing socially productive lifestyles. Special attention is focused on the identification of factors that may be modified by funding agencies and programs to provide improved services. When combined and coordinated with the results of other studies, the TOPS data will help answer many key questions about the overall

effectiveness of drug treatment programs and the types and mix of treatment services that are most likely to lead to positive outcomes for particular types of clients. Thus, TOPS data should become a viable resource for the development of more efficient and effective drug abuse treatment policies and programs.

B. Scope of the Present Report

More detailed information on the TOPS research program is contained in the remainder of this report and in the TOPS methodology report (Hubbard, Rachal, Cavanaugh, Kirkpatrick, and Richardson, 1981). Additional information will also appear in forthcoming reports on special issues such as employment, drug and alcohol use patterns, depression and criminal behavior.

Although the followup phase of the TOPS project is still ongoing and many data remain to be gathered, complete data sets for the 1979 Cohort are available for the intake interview and the one-month, three-month, six-month, nine-month, and twelve-month intreatment interviews. Basic descriptive analyses have been completed for these data and form the basis of the results presented in this report. These analyses examine demographic and lifestyle variables; alcohol and drug use patterns, associated problems, and treatment; mental health and treatment patterns; illegal activity and criminal justice involvement; and employment and income related activities.

The present report provides initial descriptive information about the characteristics, behaviors, and intreatment outcomes for the 1979 TOPS admission cohort. Literature providing a background for the current research is reviewed in chapter II. Next, the methodology of the study is discussed briefly in chapter III. Basic descriptive results appear in chapters IV through IX. Chapter X highlights data on treatment program services and client satisfaction with those services. Chapter XI presents the effects of treatment up to 12 months on six selected outcome measures. The report concludes with a final chapter that briefly summarizes major findings and suggests some tentative implications.

It is important to recognize that, in addition to providing a basic description of the 1979 Intreatment Study cohort, this report is intended to suggest relations and hypotheses that subsequent, more detailed multivariate analyses will examine. Even though this report does not attempt to examine

complex interrelationships between sets of variables, the data that are presented provide the critical descriptive information about behaviors and treatment outcomes of current drug treatment clients upon which future analyses and reports must be based. Because of the emphasis on description and overall relationships rather than formal hypothesis testing, significance tests have not been employed. The reader is cautioned against making inferential conclusions based on data presented in this report.

Clearly any explanation of the findings from the TOPS research must employ a longitudinal, multivariate approach that takes into account the interactions over time of a number of individual characteristics, treatment program services, and community descriptors. Such analyses are under way and will be available in forthcoming reports on the TOPS Intreatment and Followup studies. This initial descriptive report will serve as a critical reference document for the planning, conduct and interpretations of these future analyses and reports.

II. BACKGROUND AND RELATED RESEARCH

The development of drug treatment programs and their evaluations provide a context that is helpful in appropriately analyzing and interpreting the data available from the TOPS research. It is important to note that TOPS' longitudinal prospective research design is not unique. Various major research efforts based on longitudinal designs have contributed important scientific and policy relevant information. The following sections of this chapter briefly outline some of the key background information helpful in providing a perspective for interpreting the TOPS Intreatment Study data presented in this report. The literature review in this chapter focuses on selected major drug abuse treatment evaluation studies. Because this review is designed to provide a background and perspective on drug treatment research, it does not attempt to include all available literature.

A. Development of Drug Treatment Programs

The availability of treatment for drug abusers has increased greatly in the past decade and significant changes have occurred in the orientation of treatment programs. Jaffe (1977; 1979) as well as others have noted how limited the number and types of drug treatment programs were a decade ago. Also notable is how little was known about the effectiveness of the major programs in force in the latter half of the 1960s such as the Narcotic Addict Rehabilitation Act (NARA) hospitals, the Beth Israel Methadone Maintenance program, Synanon and California Civil Commitment program. Regardless of the management and/or efficiency of drug abuse services, the early 1970s was a period of dramatic support for and proliferation of treatment programs. In the four years, 1970-1973, "Federal expenditures for drug treatment and rehabilitation increased nearly thirteen-fold" (National Commission on Marihuana and Drug Abuse, 1973, pp. 301-302). The proliferation of programs was accompanied by a large number of studies which examined the impact of individual treatment programs. Some of these studies provided important insights into the treatment process and suggested new research approaches. Most, however, contained serious shortcomings that have called their results into question. Major criticisms have centered around measurement, design, sampling, analytic, or interpretive weaknesses.

Despite the problems of past research, it is clear that continuing support for treatment services requires knowledge about their effectiveness

in terms of health benefits and other returns for public dollars spent. Policy strategies such as those implicit in the series on Federal Strategy on Drug Abuse and Drug Traffic Prevention (1975-1980) could be "fine-tuned" and more precisely directed by funding sources were they to have indepth knowledge of treatment results. Several of the important research efforts in recent years have been the direct result of policymakers' desires to obtain valid, program relevant data. Most recent studies, however, still focus on the "traditional" drug treatment client: the heroin addict.

A 1977 Presidential message to Congress called for a reorientation of the Federal drug treatment effort to include persons dependent on other drugs. In addition, Federal strategy in the late 1970s changed to take a broader perspective in the provision of drug treatment program services to include the "non-traditional" clients whose drug or alcohol consumption is contributory to other problems (Strategy Council on Drug Abuse, 1975, pp. 23-24).

The broadening orientation of drug treatment programs and service delivery systems hampers efforts to describe the characteristics and behaviors of treatment clients and to evaluate the impacts of drug treatment programs. Researchers not only must build upon past research efforts but also must be capable of identifying and assessing new directions in drug treatment efforts. The proposed use of block grants to the states suggests that many states may significantly change their treatment systems. Modifications in research design, instrumentation and analytic approaches may be necessary to provide data which meet the current needs of program managers and policy makers.

B. Past Research on Drug Treatment Programs

One of the early sets of empirical studies was carried out on the Dole-Nyswander methadone programs at New York's Beth Israel Hospital (Dole and Nyswander, 1965; Dole, Nyswander, and Kreek, 1966). Following the initial studies, the need for independent corroboration of the results led to a series of evaluation studies conducted by Dr. Frances Gearing. These have generally been positive and supportive of the Beth Israel program, but the methodological weaknesses in the studies, and the generalizability and validity of the conclusions have been strongly questioned (Lukoff, 1974; Maddux and Bowden, 1972; Nash, 1976).

Another important series of studies was conducted on the NARA hospitals at Lexington, Kentucky and Ft. Worth, Texas. Several of the studies were based on the over 6,500 patients admitted to Lexington from 1967 to 1973;

others were based on earlier, pre-NARA patients (Chambers, 1974; Chambers and Moffett, 1969; Gold and Chatham, 1973; O'Donnell, 1969; Pescor, 1938; Valliant, 1966; Voss and Stephens, 1973). These studies and the data generated provided a wealth of information about the correlates of narcotic addiction. However, for a variety of reasons ranging from the special addict population to the unique treatment facilities and approach, the current value of these studies may be more historical and theoretical than policy relevant. Consequently, the findings of the NARA studies are of limited value for other treatment programs.

In the late 1960s the most comprehensive and ambitious evaluation of drug treatment programs was begun at the Institute for Behavioral Research of Texas Christian University under the direction of S. B. Sells. The Drug Abuse Reporting Program (DARP) collected over 44,000 admission records from 52 NIDA supported agencies between 1969 and 1973. The results of the initial data collection are compiled in a series of five volumes (Sells, 1974; Sells and Simpson, 1976) and numerous technical reports and journal publications. Five year followup interviews with 3,131 clients were conducted in 1975 and 1976 from a sample of 4,107 former clients in the first two cohorts (Simpson et al., 1978; Sells et al., 1980). However, in the intervening five years no information was collected on a regular basis. Thus, information about behavior immediately after leaving treatment or variation in behavior in these five years may be unreliable because of the long recall period.

From the data on methadone maintenance treatment, Sells (1977) reported that although improvements occurred in all outcome measures, deviant behavior was not entirely eliminated. The largest changes in behavior generally occurred in the first two months with smaller changes throughout treatment. The followup data indicated that improvements in a number of outcome measures were maintained after treatment, particularly for clients in methadone maintenance and therapeutic community programs (Sells et al., 1980). Sells (1977) concluded that treatment in general does produce beneficial effects and that, especially in the case of methadone maintenance, the benefits far outweigh the costs. This conclusion was supported in an analysis of treatment cost-benefits (Rufener, Rachal and Cruze, 1976).

In addition to these large scale efforts, several important individual studies were conducted during the 1970's. Among the well-conceived and

carefully conducted studies of methadone programs are those by Newman, Bashkow, and Cates (1973) and Lukoff (1974) in New York; by Cuskey, Ipsen, and Premkumar (1973) in Philadelphia; and by Patch, Raynes, and Fisch (1973) in Boston. Studies of residential communities include those of eight programs in New York City by System Sciences. Inc. (1973) and of Phoenix House by DeLeon, Holland, and Rosenthal (1972).

Other studies of special programs have included the followup of samples of the California Civil Commitment program, 1964 and 1970 admissions and comparison groups (McGlothlin, Anglin, and Wilson, 1977). One of the few attempts at an experimental study with random assignment to treatment was made by Bale, Cabera, and Brown (1977) at the Veterans' Administration Hospital in Palo Alto, California. Unfortunately, however, client self-selection appeared to bias the results of this study despite the random assignment to treatment modalities. Only 49 percent of those randomly assigned to therapeutic communities stayed three or more days; nearly 69 percent entered and stayed at least three days for methadone treatment.

Other more general studies of different types of programs include the research by the Office of Economic Opportunity (OEO) funded by Johns Hopkins University (Mandell, Goldschmidt and Grover, 1973); Nash's evaluation of New Jersey programs (Nash, 1973) and Burt Associates' (1977) comparison of followup data from Addiction Services Agency programs in New York and Narcotic Treatment Administration programs in Washington, D.C.

In one way or another, all of these and other studies increased the state of our knowledge. However, all are still open to many basic criticisms of methodology and are of limited generalizability. Lukoff (1974), Nash (1976), Maddux and Bowden (1972), Greenberg and Adler (1974) and the National Commission on Marihuana and Drug Abuse (1973) all point out major weaknesses in past evaluation efforts. Three deficiencies appear in most treatment studies: sampling, research design and measurement. Treatment cohort entrants, non-enrollees, and splittees are often not systematically sampled. Pretreatment, intreatment and posttreatment periods differ across studies. Measures are often criticized as being unreliable and invalid. Programs are often evaluated on absolute rather than comparative levels of client behavior which would allow reasonable outcome expectations for the target populations. It is often difficult to ascertain the characteristics of the programs, the

actual structure and process of treatment, and ancillary services which would permit a more complete and useful categorization or description of programs. Another overriding problem indicated by Sells is the context in which programs operate and the nature of addiction itself.

> Unfortunately unequivocal answers are not yet available to the questions raised, and decisionmaking, both at the clinical and administrative levels, is hampered by continuing lack of definitive knowledge concerning the basic etiology and epidemiology of drug abuse and opiate addiction. Without doubt the difficulties will be increased by current budget cuts. However, effective solutions must still await the acquisition of scientific understanding of addiction and of the social-political setting in which it occurs and must be treated and controlled (Sells, 1977, p. 20).

Despite the comprehensive NARA and Johns Hopkins studies as well as the many individual studies, the basic question posed by the Domestic Council on Drug Abuse (1975) and the Alcohol, Drug Abuse and Mental Health Administration - "What kind of results are forthcoming from dollars spent supporting drug treatment programs?" - remains in large part unanswered. And, while the DARP followup studies have provided some indication of the long term impact of treatment, the last DARP cohort enrolled in 1973. Since then, addicts, treatment programs, and the economic, political and social environment have changed dramatically; significant changes are likely to continue in the next four to five years. Moreover, research such as that by Nurco (1976) on the episodic nature of drug use and addiction, by Robins (1974) on the reversibility of addiction, and by Rivers et al. (1976) on increased criminality and drug problems immediately before entering treatment, coupled with more systematic assessment of the prevalence and incidence of drug use, abuse, and associated problems have suggested new lines of research. These and other efforts may be indicative of a reorientation of policies and programs.

C. Recent Evaluations of Treatment Effectiveness

The efforts to evaluate the effectiveness of drug treatment programs are hampered by many of the same problems encountered in the evaluation of other social programs. The science of evaluation is still being developed. Recent attempts have been made to outline the issues and methodologies of evaluation (Guttentag and Struening, 1975; Struening and Guttentag, 1975), to compile important evaluation studies (Cook, 1978; Glass, 1976; Guttentag, 1977), and to obtain comments and critiques of major evaluation studies and approaches

(Abt, 1976; Cronbach and Associates, 1980). Other publications have focused on more generally practical methods of evaluating particular kinds of programs such as corrections (Adams, 1975), manpower (Borus, 1971), human service programs (Attkisson, Hargreaves, Horowitz, and Sorenson, 1978), and drug treatment programs (Bale et al., 1977; Guess and Tuchfeld, 1977; Johnston, Nurco, and Robins, 1977). Despite the development of evaluation methodologies, key questions about the effectiveness of manpower (Perry, Anderson, Rowan and Northrop, 1975), corrections (Lipton, Martinson, and Wilks, 1975; Sechrest and Redner, in press) and deterrence or incapacitation of offenders (Blumstein, Cohen, and Nagin, 1978) remain unanswered.

Recent discussions of treatment evaluation have devoted more attention to ways to overcome the problems which plagued previous research. Robins (1977) suggested methods of conducting evaluations to meet the needs of policymakers. Murphy (1979) recommends methods of assessing performance in treatment. Sells (1979), Sells et al. (1977), and Reed (1978) have discussed major concepts and approaches to investigating treatment effectiveness. Des Jarlais (1978) discusses three research evaluation paradigms applicable to different perspectives on assessing treatment program effectiveness. Lukoff and Kleinman (1977), based on a review of four major evaluations, prescribe ways to improve evaluations including correct measurement, appropriate research design, comparison of homogenous groups, consideration of possible maturation effects and multivariate analysis techniques. Although they are cautious in their assessment of the potential of future evaluations, they suggest that a careful, comprehensive approach to evaluation can be useful in assessing treatment effects.

> Sophisticated methods of analysis alone cannot resolve the problems we have reviewed concerning the assessment of program impact. However, when used in conjunction with a careful choice of comparative framework and with analysis by retention cohorts, they can add to the reservoir of knowledge about treatment. This would open up fresh possibilities for improving the treatment system, so that it could serve more effectively those who present themselves for rehabilitation (Lukoff and Kleinman, 1977, p. 173).

Three recent studies highlight the more recent advances in the field of treatment evaluation. The DARP Followup Study (Simpson et al., 1978) is a prototype for a large scale, long term followup of former treatment clients.

The recent followup of the California Civil Addict program (McGlothlin et al., 1977) used very comprehensive and detailed measurements. The evaluation of programs in New York City and Washington, D.C. (Burt Associates, 1977) used comparison and multivariate techniques to a greater extent than previous research.

1. DARP Followup

Between 1975 and 1979, the Institute of Behavioral Research, Texas Christian University, conducted a series of followup interviews with a sample of those who had entered approximately 52 DARP drug abuse treatment agencies between 1969 and 1973. Four general treatment modalities -- methadone maintenance, therapeutic community, drug-free outpatient and detoxification -- and a comparison group composed of persons who enrolled but never received treatment were represented in the sample. Simpson et al. (1978) and Simpson, Savage, and Sells (1980) have reported on the results of an analysis examining treatment outcomes during the first year after leaving treatment. Analyses compared pre- and post-treatment effects within each modality sample, including the comparison group. Other analyses were performed across the treatment groups. The posttreatment period was one year; the pretreatment period varied and included two months, one year and lifetime before entering treatment.

When pre-treatment opiate use was compared with post-treatment opiate use, the latter period was significantly lower for all treatment modes as well as the no treatment comparison group. Nonopiate drug use was lower for all of treatment modes but detoxification and no treatment. Generally, the use of alcohol and marihuana increased after treatment in all groups. Employment increased after treatment, but the increases were only statistically significant in the methadone maintenance, therapeutic community and drug free outpatient programs. Only among those in methadone maintenance was the posttreatment arrest rate significantly lower than the lifetime pretreatment level, but the proportions arrested and jailed were lower in all the groups.

Post-treatment outcomes were compared across treatment modes after control for certain variations on pre-DARP variables. The methadone maintenance, therapeutic community and drug free outpatient programs gave significantly better reports on opiate drug use, non-opiate drug use and employment than the detoxification and no treatment groups. The methadone group had significantly fewer people jailed than the drug-free, detoxification and no

treatment groups. Marihuana use was significantly lower for the therapeutic community group than all other groups but detoxification.

In a more comprehensive multivariate comparison of treatments (Sells and Simpson, 1980; Sells et al., 1980), it was concluded that methadone maintenance and therapeutic communities had long-term positive effects for daily opioid users on a composite of six behavior criteria. Drug free programs were effective for nondaily opioid users but not for daily users. Overall they concluded that all three treatment modalities were effective for particular types of clients.

2. California Civil Addict Program

One of the major followup studies of treatment in a correctional model is that of McGlothlin et al. (1977). In their evaluation of the impact of the California Civil Addict Program, they examined the drug use, criminal behavior and unemployment of matched samples of addicts. The three samples studied were groups admitted in 1964 and 1970 and a comparison group admitted in 1962-3 but released by writ. In comparing the 1964 to 1962-3 groups, it was concluded that the Civil Addict Program reduced daily narcotic use and associated behavior and may also have had some lasting effect after discharge. Supervision with testing for opiates seemed to moderate rather than prevent use. A clear evaluation of the effect of other Civil Addict Program control policies adopted around 1970 could not be made in the comparison of 1964 and 1970 Civil Addict Program participants, primarily because of the increased availability of methadone maintenance programs. However, it appeared that the 1964 sample did better than the 1970 sample for the first few years of participation. Then, when significant numbers of the 1970 sample enrolled in methadone maintenance programs, their performances matched or exceeded the 1964 group at similar years in the program.

3. New York City and Washington, D.C. Programs

Burt Associates (1977) conducted a comparative analysis of two multi-modality drug treatment programs -- the Addiction Services Agency (ASA) in New York City and the Narcotics Treatment Administration (NTA) in Washington, D.C. Each of these programs had previously been evaluated separately, the former by MACRO Systems, Inc. and the latter by Burt Associates, Inc. The retrospective designs of both evaluations were similar in that samples of clients who remained in treatment were compared to clients who enrolled but

stayed in the program only one to five days. These groups were compared for the time periods two months prior to entering treatment, the first two months after leaving treatment, and the two months before the followup interview. Within each program, comparisons were made across the treatment modalities. The outcome measures used to evaluate the success of the treatment were (a) drug use, (b) employment and other socially useful activities, (c) arrests and incarcerations, and (d) a composite of these. The client samples were selected from those entering treatment between 1971 and 1973 in the NTA program and the latter half of 1971 for the ASA program. The followup interviews were conducted in late 1974 and early 1975.

Despite a low response rate and some differences between those interviewed and not interviewed, the findings in both the NTA and ASA samples were similar. Post-treatment opiate use levels, employment and arrests were all much improved over pre-treatment levels. Treatment modality generally did not affect a different or better treatment outcome. Analyses of the comparison group and the treatment groups in each program showed no differences with respect to opiate use and criminal behavior. In NTA, the detox-abstinence mode showed a greater increase in employment than the comparison study. In ASA, the therapeutic community mode showed a greater improvement in employment than the comparison group.

D. Current State of Knowledge on Treatment Outcome Measurements

Recent improved methodologies of the studies just discussed are encouraging although it is clear that much additional research is still needed. This section summarizes the current state of knowledge on treatment outcome measures. We present a brief overview coupled with a listing of common problem areas encountered in studies of treatment outcome.

The treatment outcomes of changes in criminal behavior, employment and other productive social activity, and the use of illicit drugs have repeatedly been used to evaluate program effectiveness as has program retention. A number of reviews of studies of treatment (Sells, 1979; National Institute on Drug Abuse, 1981; Quinones, Doyle, Sheffet, and Louria, 1979) have concluded that overall there is evidence that a number of treatment approaches for drug abusers are effective. In addition to the substantive evaluation of drug abuse treatment, a literature concerned with the methodology of evaluation research in drug treatment followup studies has been developed. In large part, Lukoff and his associates (Lukoff, 1974; Lukoff and Kleinman, 1977)

have been responsible for directing attention to the key elements upon which the validity of findings from treatment outcome followup studies rests -- the measures selected, particularly those gauging criminal behavior.

1. Drug and Alcohol Use

Although logically one of the primary goals of drug treatment, reduced drug use is not generally emphasized as an outcome. Reduction in drug use was one of the clearest results of the DARP intreatment studies. Lukoff and Kleinman (1977), however, cautioned that there is considerable motivation for clients to distort reports of drug use in a program, particularly when it could affect treatment. Smart's (1976) review of outcome studies of therapeutic communities indicated that drug use was generally reported to be reduced or eliminated for many former clients. Burt Associates (1977) reported substantial reductions in drug use after treatment with little evidence of substitution. Similar reductions in daily narcotic use were reported for former Civil Addict Program clients (McGlothlin et al., 1977) though McGlothlin cautioned that part of this reduction may be due to enrollment in methadone programs.

The results of the DARP followup (Simpson et al., 1978) raised some questions about drug use after treatment. While both opiate and nonopiate use fell after treatment, alcohol use increased. Judson, Ortiz, Crouse, Carney and Goldstein (1980) found similar patterns of reduced heroin use and more alcohol use in a five year followup of methadone clients. Alcohol use is commonly found among drug abusers in treatment (Gelb, Richman, and Anand, 1978; Green and Jaffe, 1977; Green, Jaffe, Carlisi, and Zaks, 1978). Stimmel (1979) cautioned that this association should not be interpreted to mean that treatment precipitated or reinforced drinking. He reports on studies of combined alcohol and drug treatment programs that reduced both behaviors.

2. Criminal Behavior

With respect to the effectiveness of treatment in reducing crime, several reviews and studies have been completed. Nash (1976) reviewed twelve studies in a state of the art paper prepared for the Panel on Drug Use and Criminal Behavior. After reviewing the findings of eight studies of methadone maintenance, two studies of residential drug-free treatment programs and two studies of both types of programs, he concluded that, despite some methodological problems, a positive impact of treatment on criminality was demonstrated. Seven of the ten methadone maintenance studies showed a positive impact of

treatment on arrest or charge rates. All four studies of residential drug-free treatment showed lower arrest rates after treatment than before. Lukoff and Kleinman's (1977) review of some of the same studies is much less supportive of the overall conclusion that treatment reduced crime. Their critique of the studies finds fault with the data used, the failure to eliminate alternative explanations through proper design and analysis, and measurement choices.

In its review of treatment impact on crime, the NIDA Panel on Drug Use and Criminal Behavior (Drug Use and Crime, 1976) concluded that being in treatment may suppress, rather than eliminate, involvement with the criminal justice system and even criminal behavior itself. In a similar vein, an analysis of DARP followup data commissioned by the Panel (Demaree and Neman, 1976) suggested that criminal behavior increases after leaving drug treatment and may revert to pretreatment levels. A later evaluation of this relationship from the DARP data for a single year after completion of treatment confirmed that post-treatment arrests returned to pre-treatment levels for all but those patients treated in methadone maintenance programs (Simpson et al., 1978). In their analysis of the California Civil Addict Program, McGlothlin, Anglin, and Wilson (1978) found reduced criminal activity during participation in a methadone program. However, Holland (1978) found a much greater decrease in arrest rates one year after treatment for residents who completed or dropped out of a therapeutic community after nine months compared to residents who dropped out within the first nine months of treatment.

3. Employment

Probably the most comprehensive literature review of the impact of treatment on the employment and earnings of drug abuse treatment clients was conducted by Hubbard, Harwood and Cruze (1977). It was based on a review of over 70 studies of employment and earnings of drug treatment clients during and after treatment and over 50 sources on the impact of vocational services on the employment and earnings of drug treatment clients.

This literature review showed that drug abusers or addicts entering a drug treatment program appear to experience a modest increment in employment during and after treatment. Because insufficient background data on work histories prior to treatment were found, it is difficult to determine how much of this increment would have occurred in the absence of treatment. In a

few studies, comparison groups of abusers or addicts who did not enter treatment also experienced some gains in employment. The proportion of drug treatment clients reporting public assistance as the major source of support during and after treatment is much higher than the proportion reporting public assistance as the major source before entering treatment. The actual amounts of income from each of the sources were seldom obtained in treatment evaluations.

Having a job was found to be one of the strongest correlates of long term rehabilitation of drug abusers. This result is replicated in numerous studies. However, we have insufficient data to clearly determine the causal relationship (if any) between work and rehabilitation. Drug treatment clients receiving vocational and employment services have placement rates that are comparable to the after treatment employment rates of a general sample of treatment clients. The impact of vocational and employment services is unclear. We lack data on the background, work histories, labor market conditions and vocational needs of clients receiving vocational and employment services. Consequently it is difficult to estimate what would have been the employment-related behaviors in the absence of services. The available studies indicate that job retention and the type of job placement are areas that require further research.

The results of the more recent McGlothlin study (McGlothlin et al., 1978), the DARP followup (Simpson et al., 1978), and the National Supported Work Demonstration (1980) also show increases in employment after treatment. The definitions and measurements of employment, however, remain suspect (Hubbard et al., 1977), and the use of different employment criteria may give very different impressions on program effectiveness (Bloch, Ellis, and Spielman, 1977).

4. Depression

Woody and Blaine (1979) reviewed the considerable evidence of the association between depression and addiction. An association between drug use and depression has been observed in a number of research studies (Beck, 1967; Gilbert and Lombardi, 1967; Penk, Fudge, Robinowitz, and Neman, 1979; Robins, 1974; Sutker, 1971). In this positive relationship, as drug use increases, so does depression. Miles (1977) has estimated that 10 percent or more of opiate addicts will die by suicide (an outcome measure of depression). Thus, it seems that depression, whether a cause or an effect of narcotic addiction

or only a positively correlated phenomenon, is a factor that must be considered in drug abuse treatment programs.

Depression was common among applicants to a variety of programs including VA hospitals (Harris, Linn, and Hunter, 1979), therapeutic communities (DeLeon, 1974; Zuckerman, Sola, Masterson, and Angelone, 1975) and methadone programs (Weissman, Slobetz, Prusoff, Mesritz, and Howard, 1976; Frederick, Resnick, and Wittlin, 1973). The effects of treatment on depression are confounded. Woody and Blaine (1979) reported that most studies find that high levels of depression at intake decrease over time. However, they also caution that suicide attempts are more common during withdrawal phases of treatment. In a long-term study of depression (Dorus and Senay, 1980), scores on depression decreased substantially regardless of type of substance abuse or length of treatments.

5. Lifestyle

Several investigators have noted that almost all the friends of drug abusers also use drugs (Agar, 1973; Kandel, 1973). In their review of the literature, Catton and Shain (1976) note that, in the United States, initiation into heroin use is most often a social occurrence among friends rather than a result of the drug being pushed. Further, they point out that heroin use is not just a habit but a style of life.

Many authors have attempted to describe the lifestyles of the heroin addict and other drug users (Schur, 1962; O'Donnell, 1966; Stephens and Levine, 1971; Nurco, 1972; Sutter, 1969; Preble and Casey, 1969). In examining this literature it becomes apparent that the addict's lifestyle may be as much a product of the community in which the addict lives as it is the addict's personal attributes. Such community factors as police pressure can readily effect the addict's pattern of existence. Hughes, Crawford, Barker, Schumann, and Jaffe's (1971) description of the social structure of a local heroin maintenance system (i.e., copping community) suggests that the individual's role within that structure is an important predictor of the addict's response to available treatment.

The point has been made that the drug network within a community is most often structurally weak in that it exists only as a function of "mutual dependence upon supply" (Gorsuch and Butler, 1976). Friendships among drug users are often superficial and without intimacy (Einstein, 1969). Moreover, when the drug network becomes less useful as a means of obtaining drugs, the

user is likely to withdraw from close contact with it. As such he or she may become more open to other societal forces such as family and friends who do not use drugs.

In point of fact, lack of strong family or peer group ties has been linked by a number of investigators to drug abuse (Craig and Brown, 1975; Chein, Gerard, Lee and Rosenfeld, 1964). Lifestyle variables, especially peer group relationships and family support, are thought to be important predictors of treatment outcome (Stanton, 1979). More specifically, referrals to drug treatment by family members are associated with longer stays in treatment than referrals from other sources (Panyard, Wolf, and Dreachslin, 1979).

Lifestyle variables, with the exception of those aspects specifically related to criminal and employment activity, have been used almost exclusively as predictors of drug use (Kleinman and Lukoff, 1978; McDermott, Scheurich, and McDermott, 1978) rather than as outcome measures for those engaged in drug treatment. Mandell and Amsel (1976) did examine addict lifestyles after treatment but no comparison was made to the addict's pretreatment style of life. The authors, using factor analysis, found ten lifestyle dimensions including addict criminality, stability of abode, economic productivity, alcohol abuse, psychological symptoms, heterosexual adjustment, police contact, social isolation, and medical services which together explained 73 percent of the variance in client lifestyles. The relative independence of these dimensions from each other suggests the need to assess them all to adequately measure treatment outcome. Moreover, as Mandell and Amsel point out, changes in drug use do not necessarily covary with the client's activity on other lifestyle dimensions such as relationship to family. There is need, then, to go beyond the classic outcome variables now employed in most drug treatment studies to a fuller consideration of a broader range of client lifestyle dimensions.

6. Retention

Many researchers have considered retention important in the evaluation of treatment (e.g., Gearing, 1977) and of TASC treatment referrals (System Sciences, 1978). Joe and Simpson (1975) reported high rates of treatment termination. Three-quarters were found to leave treatment prior to completion and 50 percent left within three months. Szapocznik and Ladner (1977) in their review of factors related to retention in methadone maintenance cite retention as a major indicator of appropriateness of particular kinds of

programs for different types of clients. Steer (1980), however, concluded that different factors predicted retention in different types of programs. Judson et al. (1980) found no effects of retention on outcome in methadone programs. In therapeutic communities the length of stay has been an important predictor of reduction in drug usage and work adjustment after treatment (Culter, 1977) and of successful completion of treatment (Wexler and DeLeon, 1977). This suggests that retention in a specific program may be an important indicator of treatment outcome. Sansone (1980) suggests that retention patterns may be used to better assess how therapeutic programs function.

Other recent research suggests that a broad definition of retention may be needed. Simpson et al. (1978) reported that 39 percent of methadone maintenance clients and about one-fourth of the drug free clients return to treatment within a year. This raises the question of whether repeated exposures to treatment are more effective than one episode (McLellan and Druley, 1977). Siguel and Spillane (1978) reported that this was not the case. Clients reporting no previous treatment experiences in CODAP have a greater likelihood of completing treatment. Simpson et al. (1978) report a similar result in the DARP followup. Thus, the total time in treatment appears less important that the retention in a single program. Retention in a single program was identified as a key correlate of successful behaviors across a variety of indices and types of programs, even after controlling for other factors (Simpson et al., 1978).

E. Implications

The nature and quality of services received, the correlates with variations in client behaviors during and after treatment and major scientific policy and program questions about the characteristics of clients in programs, then, remain largely unanswered or continue to require updating despite many previous studies. Many studies of individual programs have limited generalizability because of sampling, design and/or measurement problems or idiosyncrasies. Moreover, no comprehensive coordinated national effort to examine the dynamics of the behavior of clients during and after treatment has been attempted for over five years. The TOPS research program has been designed to fill the existing information gap and to develop timely, generalizable information on the behavior of clients currently entering drug treatment programs.

III. METHODOLOGY OF THE INTREATMENT STUDY

We begin this description of the general methodology of the Intreatment Study by briefly considering the design of the TOPS research program. The selection of communities, programs and clients for the first year of the Intreatment Study is discussed next and is followed by an examination of the intreatment interviews and the data collection and processing system. Covered in the final section is the general approach to the TOPS data analysis.

But, before beginning, it is important to note that the design of the TOPS Intreatment Study was based on considerable planning by a panel of experts (Williams, 1975) and the results of an extensive pretest (Hubbard, Sandorf, Rachal, and Cavanaugh, 1978) and is integrated within the total TOPS research program. The design constraints of the TOPS Intreatment and Followup Studies were considered when the data collection for the first year of the Intreatment Study (1979 cohort) was planned. All phases of the TOPS research program are capable of being expanded to meet future research needs. The design facilitates the assessment of the utility of future cohorts, followups and special studies. More complete information about the technical issues and details of the methodology are reported by Hubbard et al. (1981).

A. TOPS Prospective Cohort Research Design

The complexities of studying the behavior of clients in natural settings pose many design, analysis and interpretation problems. The TOPS research program is principally a descriptive and correlational assessment of client behavior which employs a survey design for the data collection. More formally, TOPS uses a longitudinal prospective cohort research design. Detailed background information for each client was collected retrospectively at intake for the year before entry into treatment. Intreatment interviewing takes place at one month, three months and quarterly thereafter for as long as two years if the client remains in treatment. Followup interviews are conducted with samples of clients 3, 12 and 24 months after treatment. Thus, a longitudinal methodology is followed for three calendar year entry cohorts, 1979-1981.

The use of a longitudinal, prospective cohort design has two major advantages over other feasible designs. First, it permits the use of measurements collected at one time to predict behaviors at a later time. Second,

the cohort design can provide an assessment of the impact of events occurring over time that might change the nature of treatment, the characteristics and behaviors of clients entering treatment and the community environments that may affect program operations and client behaviors.

While TOPS is viewed principally as a descriptive study, the prospective cohort research design encompasses many of the principal strengths of both evaluation and developmental research designs. The major methodological issues of quasi-experimental evaluation designs concern internal and external validity (Campbell and Stanley, 1963; Cook and Campbell, 1979). Key concepts to be considered in developmental or natural history studies are age of the individual being studied, the cohort or contemporaries of an individual, and the time of measurement (Schaie, 1965). These concepts will be considered and the issues addressed with TOPS prospective cohort research design.

B. Selection of Communities, Programs and Clients

The 1979 Intreatment Study population consisted of all clients who applied for treatment or were admitted to treatment in 27 selected programs in six geographically disparate communities. Clients contacted by the TASC programs in four of the communities constitute a separate but overlapping population (Collins et al., 1981). Major emphasis was placed on a reasonable, manageable number of selected programs in order to tightly control the study, to minimize nonresponse, and to maximize quality control. The programs considered for selection in each site included the major modalities of detoxification, maintenance, residential and outpatient drug free.

1. Communities

Communities were selected by region in order to provide a geographical distribution of the programs and treatment systems studied. Community selection included consideration of the stability of the treatment system, the environment in which the program functioned, and the presence and stage of development of the TASC program. The goal was to select communities that reflected the problems of and approaches used in large scale treatment systems in major metropolitan areas as well as centralized systems in smaller cities. Based on considerations of the technical, administrative and logistical advantages and disadvantages of working in each city, the final sample for the 1979 Intreatment Study included the cities of Chicago, Illinois; Des Moines, Iowa; New Orleans, Louisiana; New York, New York; Phoenix, Arizona; and Portland, Oregon.

2. Programs

The programs selected in each site included those (1) that represented major modalities, (2) that were established, functioning programs, and (3) that reflected particular typologies of treatment. Further, in each site at least five programs were considered in detail prior to selecting appropriate programs for the Intreatment Study.

While it is clear that the programs specially selected for TOPS do not constitute a statistically representative sample, they do reflect a variety of approaches to treatment. Efforts were made to select programs that reflected typical approaches to major modalities of treatment as well as variations in those approaches. Twenty-seven different definable drug treatment programs were involved in the first year of the Intreatment Study. These included three outpatient detoxification units, eight outpatient methadone programs, seven outpatient drug free facilities and nine residential programs. Some of the intake interviews for clients referred to treatment in TOPS programs through four TASC agencies were conducted at the agencies.

Each of the four basic drug treatment modalities/environments included in the TOPS Intreatment Study conforms to the definition by NIDA.

- Drug detoxification --The period of planned withdrawal from drug dependence supported by use of prescribed medication. Withdrawal without medication is "drug free."

In the TOPS Intreatment Study the major type of detoxification program has been ambulatory detoxification from opioids.

- Outpatient Methadone--modality assigned to the client during which compensating medication (usually methadone) is prescribed to achieve stabilization. Detoxification from maintenance or slow withdrawal is included in this category.

The maintenance programs in the TOPS Intreatment Study are primarily outpatient methadone programs although several residential programs prescribe methadone for some clients.

- Residential treatment unit--The client resided in a drug abuse treatment unit other than a prison or hospital. Halfway houses and therapeutic communities are included in this category.

Included in the residential modality was a variety of programs such as traditional therapeutic communities, minimum security residences and halfway houses.

- Outpatient drug free--The client resided outside the unit and was prescribed no chemical agent or medication as a primary part of drug treatment though temporary short-term medication such as minor tranquilizers are sometimes used. The client attended the unit according to a predetermined schedule for a program that emphasized counseling and supportive services.

The TOPS outpatient drug free programs have included a wide range of approaches. No independent daycare programs have been included in the TOPS Intreatment Study though one residential program provides daycare for clients in the reentry stage.

3. Clients

The Intreatment Study employed a census rather than a sample of clients in each participating program except one detoxification program. A random sampling was used in that program which had more than 50 intakes per month. A census permits greater quality control, eliminates sampling error, and permits the observation of the total scope of the variety of behavior occurring in a single treatment program. Including all clients in a program allowed the study resources to be focused more directly and economically.

An attempt was made to interview all drug abusers when they first physically contacted the treatment program to gain admission. Because programs differed in their definitions of admission to and discharge from treatment, uniform eligibility and termination criteria were developed. These definitions are discussed in the following paragraphs.

Individuals were defined as eligible for the TOPS Intreatment Study if:

- They physically visited the program (clinic) seeking admission or readmission and
- Appeared eligible for the drug treatment program and
- Initiated the program intake process and
- Had not previously participated in the TOPS Study in any program and
- Had not previously refused to participate in TOPS in any program and
- Had not previously been contacted by a Program Researcher (PR) in any program about participating in TOPS.

Individuals were excluded from the TOPS Intreatment Study if they:

- Were clearly not eligible for the drug treatment program or
- Had previously refused an Intake interview in any program or
- Had previously been contacted about TOPS by a PR in any program to which they applied but were not interviewed or
- Had previously participated in TOPS and met TOPS discharge criteria or
- Had previously participated in TOPS in any program and discontinued intreatment interviews for any reason.

Individuals clearly not eligible for a drug treatment program were, of course, not interviewed for the TOPS Intreatment Study. For example, alcoholics with no drug problem, individuals with overriding psychiatric problems, and those not meeting any program eligibility criteria such as age or drug history were excluded.

In the Intreatment Study, interviews were scheduled for up to two years with all clients who were admitted to TOPS programs and who completed an intake interview until they met one of the following TOPS termination criteria: (a) a client refused or missed two consecutive intreatment interviews, (b) a client refused further participation in TOPS, (c) a client died or was permanently not capable of participating in TOPS, or (d) a client met TOPS discharge criteria. Three criteria defined a TOPS discharge: (a) a CODAP discharge and no readmission to the program within 15 days after discharge, or (b) no physical contact with program for 30 days prior to scheduled Intreatment interview date, or (c) TASC clients who did not report to a TOPS program.

C. Intreatment Study Data Collection

The longitudinal design of TOPS makes each intreatment and followup interview critical both technically and operationally. The benefits and disadvantages of the intreatment interview schedule used in the Intreatment Study and alternative data collection points were carefully examined in the pretest.

1. Schedule of Interviews

The major technical concerns in determining the frequency of interviews include the analytic and conceptual problems of (1) identifying key points in the treatment process, (2) identifying points where major changes in behavior occur, (3) plotting trends on behavior, and (4) establishing

boundaries of time periods by chronological dates or key events. The operational concerns included (1) scheduling of intreatment interviews, (2) considering the respondent's ability to recall behaviors accurately, (3) assessing the effects of repeated testing and respondent burden, and (4) determining timely notification of treatment termination.

To determine the best points for interviews, both empirical and impressionistic data were examined. Four key periods in a client's experience with treatment were identified: (1) the period prior to a commitment to enter a treatment program, (2) the period between commitment to enter treatment and the actual beginning of a treatment plan, (3) the period when initial treatment services are received, and (4) the period after treatment has been completed. Based on both technical and operational considerations, interviews to assess behaviors over these time periods as effectively as possible were scheduled:

- at initial contact with a program
- one month after treatment admission
- every three months after treatment admission up to 24 months.

When a client terminates treatment he or she then becomes eligible for selection for the followup investigation. In the Followup Study attempts are made to interview clients 3, 12 and 24 months after termination from treatment. Thus, the behavior of clients before, during and after treatment can be directly compared.

2. Interview Instruments

Two basic instruments were used in the Intreatment Study -- one for the Intake interview and one for the Intreatment interview. In each interview, locator information including present address, mailing address, phone numbers, names of close friends and the like were collected to facilitate followup.

Clients were first interviewed when they applied for admission to a TOPS program. In this interview they were asked to provide information about their background including their education, training, current living arrangements and their contact with the treatment program. They were then asked to report on their use of alcohol and drugs during the past three months and the 12 months prior to contacting the TOPS program and describe their treatment histories. Next they were questioned about their involvement in illegal activities over these 12 months, including types of offenses, arrests and convictions. (Clients completed a self-report form not seen by the interviewer for the sensitive questions on frequency of committing illegal acts.)

This was followed with items about respondents' past and present employment activities. The interview concluded with questions relating to income and expenditures over the previous three months and past year.

Following intake, the intreatment interviews took place one month, three months, and quarterly thereafter for up to two years as long as the client remained in treatment. Since a major goal of the intreatment interviews has been to trace changes over time for TOPS clients, the intreatment interviews generally follow the format described above for the intake interview, but the focus is on behavior occurring during a specific three month time period based on the CODAP admission date. In addition, information about the status of the client in the treatment program during this time has been gathered.

Because much of the data collected in the intake and intreatment interviews is sensitive and confidential, special safeguards have been taken. For example, researchers cannot be held in contempt for refusing to reveal information in any civil or criminal proceeding. Self-admitted criminal activity reports have been sent directly to the research center precluding even the inadvertent exposure of this material to program staff.

3. Data Collection and Data Management

The client data at the programs were collected by RTI staff or treatment program staff members who were hired specifically to implement TOPS. Selection criteria for the program researchers (PRs) were developed as part of the pretest. The PRs were trained and their technical performances monitored and evaluated by field supervisors. Quarterly visits to each program and a monthly PR performance evaluation were used to ensure the quality of data collected.

The data processing system developed during the pretest was implemented in the Intreatment Study. The major components of the system include data receipt, manual edit, direct data entry, data transmission, machine edit and data base construction. A control system monitored the flow of each interview and client record through the data processing system. Quality control checks have been routinely made within each component of the system.

4. Reliability and Validity

Reliability and validity are crucial concerns to the study of clients' behavior during drug treatment. Procedures for testing both reliability and validity have been employed in the TOPS Intreatment Study. The integrity of the data was first insured, however, by subjecting information

from interview instruments to standard checks for data quality. Out-of-range codes, consistency codes, and instrument skip patterns were checked. The reasonableness of the item values was machine checked and edited to detect coding or data entry errors.

The internal consistency or reliability of the responses was checked where possible. Such consistency checks were made by comparing the answers to repeated items (e.g., checking the logic of certain responses given other responses), cross-checking common factor items, and making judgments about the face validity of responses (e.g., an addict's claim to have sustained a $1,000 a day habit for a year or more does not have face validity).

For TOPS the empirical validity of the data collected in each Intreatment interview wave has been checked in two ways. First, a series of external information checks are being made. For example, selected information given by a sample of the respondents may be checked through a variety of outside sources such as phone books and police, employment, and treatment records. Second, in programs where urinalyses are conducted, drug use as detected from urinalysis records can be compared to self-reports of drug use.

No single method or criterion appears adequate to establish the reliability and/or validity of self-reports. Thus, combinations of procedures are employed to determine if the measures accomplish the stated purpose. The TOPS methodology report (Hubbard et al., 1981) and other special reports and papers examine the issues of reliability and validity in greater detail.

D. Data Analysis Approach

To accomplish the general purpose and goals of TOPS, it is essential to examine the TOPS data systematically. Ultimately, multivariate analysis will be used to analyze and present the data. However, a necessary first step is to describe the characteristics and behaviors of cohorts of drug abusers before, during and after treatment. Then, attempts can be made to understand differences in behaviors among clients who have different backgrounds, who receive different types of treatment services, and who face different community environments.

The data collected as part of the TOPS Intreatment and Followup studies, while quite extensive, nonetheless have limitations. Early developmental history, physiological, and psychological/psychiatric data elements which may be important to a complete understanding of client behaviors are not included. For the most part, interviews with clients focus on the social, economic and

other behaviors before, during, and after treatment. When merged with parallel data on life history (activities in the time just before entering treatment), an extensive data set is created. Given the large amount of longitudinal, behavioral data collected, a conceptual framework is necessary to provide directions to the inquiries and to generate hypotheses that can be examined with the data set.

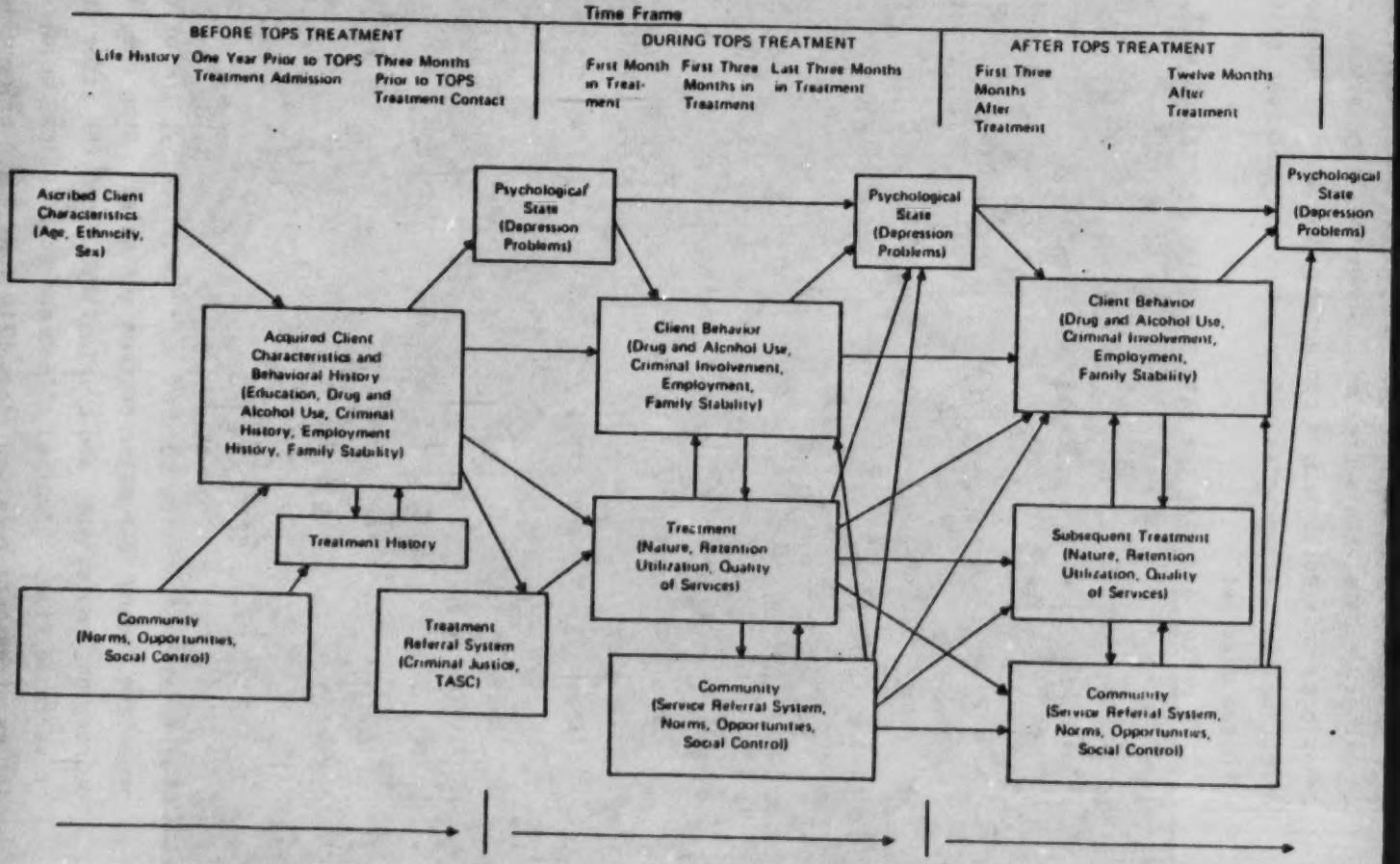
To better organize the data analysis, general as well as heuristic models are used to indicate the general classes of variables to be included in the analyses and the temporal relationships to be examined. Four major types of variables are investigated in TOPS: client background characteristics, client behavior, treatment program services, and community descriptors. The major analyses focus on client behavior in various time periods. The design of the Intreatment and Followup Study interviews includes the periods of (1) lifetime, one year and three months prior to treatment, (2) one month and every three months after entering treatment, and (3) approximately 3, 12 and 24 months after leaving treatment.

One general model of the major categories of variables and the time periods in the overall TOPS design is presented in exhibit III.1. This model illustrates the time periods for which particular types of variables will be available. The arrows indicate the assumed temporal and causal direction of the relationships. In many cases, such as the relationship between treatment and community variables, each variable could affect the other. In other cases, especially at the client level of analysis, the direction of the relationship could only be one way. For example, the community characteristics may influence the individual client, but it would be unlikely that the client would influence the community characteristics.

To accomplish the data analyses systematically and efficiently, reliance is placed heavily on analyses within and among categories of the variables outlined in the general model presented in exhibit III.1. In these analyses, an attempt is being made to use existing theory and research on treatment outcomes to generate hypotheses to be tested in the analyses and to suggest covariates that must be controlled. Specifically, the principle analyses are organized around four major outcome variables: drug use, indicators of depression, employment, and criminality. Then the association of each class of variable (i.e., ascribed client characteristics, acquired client character istics, treatment received, community impact and prior client behavior)

Exhibit III.1

General Model of Relationships Among Client Behavior, Drug Treatment and Community Variables


Time Frame
BEFORE TOPS TREATMENT
Life History
One Year Prior to TOPS Treatment Admission
Three Months Prior to TOPS Treatment Contact
DURING TOPS TREATMENT
First Month in Treatment
First Three Months in Treatment
Last Three Months in Treatment
AFTER TOPS TREATMENT
First Three Months After Treatment
Twelve Months After Treatment
Ascribed Client Characteristics (Age, Ethnicity, Sex)
Psychological State (Depression Problems)
Psychological State (Depression Problems)
Psychological State (Depression Problems)
Acquired Client Characteristics and Behavioral History (Education, Drug and Alcohol Use, Criminal History, Employment History, Family Stability)
Client Behavior (Drug and Alcohol Use, Criminal Involvement, Employment, Family Stability)
Client Behavior (Drug and Alcohol Use, Criminal Involvement, Employment, Family Stability)
Treatment History
Treatment (Nature, Retention Utilization, Quality of Services)
Subsequent Treatment (Nature, Retention Utilization, Quality of Services)
Community (Norms, Opportunities, Social Control)
Treatment Referral System (Criminal Justice, TASC)
Community (Service Referral System, Norms, Opportunities, Social Control)
Community (Service Referral System, Norms, Opportunities, Social Control)

with each outcome is examined. Following this within-class analysis, the variables that explain the highest proportion of the variance can be combined into a cross-class multivariate analysis to develop a more general descriptive model of behavior that indicates the many individual and environmental factors that may influence behavior. Special attention is always directed toward describing factors in treatment and client characteristics that suggest client and program matches that maximize socially approved behaviors during and after treatment. Thus, emphasis throughout is placed on (1) developing and revising models that describe the behavior of clients during and after treatment and (2) generating and examining questions about the association of various individual variables and/or classes of variables with the behavior of clients during and after treatment.

E. Presentation of Data

The data presented in the following chapters are based on the information obtained from clients entering TOPS programs from January 1, 1979 through December 31, 1979. Data are drawn from intake interviews and intreatment interviews at one, three, six, nine, and twelve months. The results presented are primarily descriptive. More detailed analyses employing univariate and multivariate statistical techniques will appear in subsequent reports. For the most part, the data are presented within the four treatment modalities/environments (outpatient detoxification, outpatient methadone, outpatient drug free and residential). In addition, some data are presented by the three categories of criminal justice system involvement (TASC, non-TASC criminal justice system and no criminal justice involvement) at the time of contact with the TOPS program.

The next six chapters offer descriptions of a number of major variables examined in the intake interview: demographic characteristics and lifestyle; alcohol use, problems, and treatment; drug use patterns; drug and mental health treatment; illegal activity and criminal justice involvement; and employment and income activities. In these descriptions we focus on the characteristics and behaviors of the clients in the year prior to treatment. Although we also collected data on characteristics and behaviors in the three months immediately prior to treatment similar to the DARP studies, we feel that the one year period usually provides the most comprehensive picture of client activities prior to treatment and the most appropriate baseline for comparison of behaviors during and after treatment. Subsequent analyses and

reports will address the issues of the similarities and differences in behavior in the year versus the three months prior to treatment.

The Client Oriented Data Acquisition Process (CODAP) has been funded by NIDA to monitor clients and treatment programs and to gather and summarize current information for planning, management and evaluation. The admission and discharge reports from CODAP provide the most current and comprehensive data bases available for comparing TOPS data with a national census of drug treatment clients. All programs which received federal funds have been required to report into the system. In addition, several states collect data from all treatment programs in their states through their single state agencies. However, not all programs have reported into the system. It has been thought that half of all drug treatment clients were recorded in the CODAP system, but it is unknown how representative these have been of the programs, clients, or drug abusers in general (Kurke and Cavanaugh, 1976; Siguel and Spillane, 1977).

Comparison of data might also be made using general population data for the subgroups which best match the clients in each modality by sex, age, race and socioeconomic measures. Such a source of general population data is the Current Population Reports, a series based on summaries of the results of the Current Population Survey (CPS) of a random national sample of the noninstitutionalized population in the United States. The survey is conducted monthly by the Bureau of the Census and includes information on a variety of characteristics of the U.S. population and various subgroups. Several reports contain descriptions of characteristics for subgroups of the population such as sex, age, and race that could be directly compared to the TOPS data. Thus, we could determine how closely drug treatment clients resemble people of the same demographic or socioeconomic groups. Such comparisons aid in better identifying the special characteristics and service needs of clients in drug treatment programs.

IV. DEMOGRAPHIC AND LIFESTYLE CHARACTERISTICS

The present chapter presents a general description of demographic and lifestyle variables for the TOPS 1979 admission cohort based on information drawn from the intake interview. The demographic data are vital to enable us to compare and contrast the characteristics and behaviors of the TOPS sample with that of similar types of drug treatment clients and persons with similar backgrounds not in treatment. These basic variables also provide a set of covariates that must be taken into account in the multivariate assessment of treatment outcomes.

A. Demographic Characteristics

Looking at basic demographic descriptors is a beginning point for characterizing TOPS clients. Table IV.1 indicates sex, ethnicity, age, and educational status of the 1979 TOPS cohort at admission to the TOPS program. Overall, the sample is 72 percent male and 52 percent (non-Hispanic) white with 57 percent between ages 21 and 30. Reports of formal schooling indicate that 51 percent do not have a high school degree, but 11 percent of these clients (i.e., 5.6 percent of the total sample) are under 18 years of age.

This educational level is considerably lower than that of the general U.S. population. In 1977 only 16 percent of the population ages 22-34 and 25 percent of those ages 35-44 were not high school graduates (U.S. Bureau of the Census, 1979). However, among black males ages 22-34 and 35-44 with incomes below the poverty level, 42 percent and 71 percent respectively did not graduate from high school. Thus, although the educational attainment of drug treatment clients is low, their educational attainment may not be that much different from that of similar socioeconomic groups.

There are important client differences among the TOPS modalities/environments. Within the outpatient drug free modality, there are greater proportions of females (36 percent), non-Hispanic whites (82 percent), and clients under 18 (14 percent) than in the total TOPS sample. The outpatient detoxification modality is characterized by a greater proportion of blacks (67 percent) and clients over 30 (43 percent) than the TOPS sample as a whole. Other demographic differences among modalities can be identified in table IV.1 and must be taken into account in the interpretation of any TOPS results.

Table IV.1. Demographic Characteristics of TOPS Participants at Admission by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	Total (n=3389)
Sex					
Male	77.1%	71.7%	63.7%	79.5%	72.4%
Female	22.9	28.3	36.3	20.5	27.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1112)	(n=890)	(n=865)	(n=3389)
Ethnicity					
White	24.5%	43.5%	81.5%	50.8%	52.4%
Black	66.7	35.6	10.3	40.9	35.1
Hispanic	8.6	20.7	6.5	7.2	11.7
Other	0.2	0.2	1.7	1.1	0.8
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1111)	(n=890)	(n=865)	(n=3388)
Age					
Under 18	0.2%	0.0%	13.8%	7.6%	5.6%
18 - 20	2.1	3.1	13.7	13.6	8.4
21 - 25	20.8	23.7	29.7	32.8	27.2
26 - 30	33.6	38.0	22.2	24.9	29.8
31 - 44	35.6	30.1	18.0	18.1	24.7
Over 44	7.7	5.1	2.6	3.0	4.3
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1111)	(n=889)	(n=863)	(n=3383)
Education					
Grade School or less	7.3%	9.8%	7.7%	12.4%	9.5%
High School/ no diploma	34.1	46.6	38.0	43.1	41.5
High School Graduate	34.3	25.4	29.8	24.6	27.8
More than High School	24.3	18.2	24.5	19.9	21.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1112)	(n=890)	(n=864)	(n=3388)

Note: n's fluctuate slightly within modalities due to missing data.

Table IV.2 compares demographics of the TOPS respondents and the 1979 CODAP population. As shown, the differences between TOPS and CODAP are small. There are identical percentages of males and females in both groups. TOPS included more black clients (35 percent) than CODAP (29 percent) but the same proportion of Hispanic clients. Compared to CODAP, TOPS clients on the average were somewhat older with age differences most pronounced for clients under age 21. Whereas CODAP reports indicate 24 percent of the clients were under 21, the TOPS study has only 14 percent. These differences may be due largely to the decision to exclude school-based programs from the TOPS sample. Generally, however, the sample of TOPS programs appears to reflect the types of demographic characteristics found in nonschool-based treatment programs.

Another difference between TOPS and CODAP appears to be clients' level of education. More TOPS clients age 18 and over report pursuing post-secondary education (21 percent versus 18 percent). However, CODAP clients are reported as high school graduates (55 percent versus 49 percent). This result may be due in part to the more detailed questions used in TOPS to confirm that degrees or diplomas were actually received.

B. Lifestyle

Several questions concerning client lifestyle were included in the TOPS questionnaires to provide information about clients' circumstances. Client marital status and number of dependents at intake are summarized in table IV.3. Of the total sample, 17 percent reported being legally married at the time of entry into treatment while another 14 percent described themselves as "living as married." In addition, 43 percent reported that they had never been married, and 26 percent described themselves as widowed, separated, or divorced. Over half (58 percent) reported having no dependents (defined as "spouse, children, other family members or others living with you"), though 6 percent reported 4 or more dependents.

Comparison of TOPS and CODAP data (not shown in a table) reveals that the proportions of clients describing themselves as married, widowed, separated or divorced are very similar. The major difference between TOPS and CODAP involves the category of "never married." CODAP describes 59 percent of the clients as "never married" compared to TOPS' 43 percent (see table IV.3). This discrepancy may be explained by the inclusion in TOPS of the "living as married" category. A large proportion of the 14 percent classified in this category in TOPS would likely be considered "never married" in CODAP.

Table IV.2. Demographic Characteristics of 1979 CODAP Clients and 1979 TOPS Respondents

Demographic Characteristic	CODAP	TOPS
Sex		
Male	72%	72%
Female	28	28
	100%	100%
	(n = 228,968)	(n = 3,389)
Race/Ethnicity		
White	57%	52%
Black	29	35
Hispanic	13	12
Other	1	1
	100%	100%
	(n = 228,922)	(n = 3,388)
Age at Admission		
Under 18	13%	6%
18 - 20	11	8
21 - 25	25	27
26 - 30	25	30
31 - 44	21	25
Over 44	5	4
	100%	100%
	(n = 228,484)	(n = 3,383)
Education - Age 18 and Older		
Less than high school graduate	45%	51%
High school graduate/ GED	37	28
More than high school	18	21
	100%	100%
	(n=198,917)	(n=3,388)

Note: Percentages are rounded to the nearest whole percent.

Table IV.3. Marital Status and Number of Dependents at Intake by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Marital Status					
Legally married	14.6%	25.5%	15.3%	10.2%	17.2%
Separated	13.2	12.0	9.7	14.3	12.2
Divorced	9.4	10.1	13.6	14.3	11.9
Widowed	1.3	1.8	0.9	1.4	1.4
Never married	35.4	31.9	51.3	54.7	43.4
Living as married	26.1	18.7	9.2	5.1	13.9
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1111)	(n=890)	(n=862)	(n=3385)
Number of Dependents					
None	46.6%	44.2%	69.5%	71.1%	58.1%
One	23.6	19.7	12.4	9.4	15.8
Two	13.0	17.8	9.2	10.3	12.9
Three	10.5	10.2	5.3	5.0	7.6
Four or more	6.3	8.1	3.6	4.2	5.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1110)	(n=888)	(n=865)	(n=3385)

Note: N's fluctuate slightly within modalities due to missing data.

Data concerning clients' type of residence and household composition when they entered treatment are summarized in table IV.4. For the entire sample, 80 percent reported living in a single family dwelling unit; 8 percent reported being in jail, prison, or juvenile detention; and 2 percent described themselves as living on the street (i.e., no regular place). The percentage of residential program clients who reported living in jail, prison, or juvenile detention (30

Table IV.4. Type of Residence and Household Composition at Intake by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Type of Residence					
Single family dwelling/apt	87.3%	93.2%	87.1%	51.9%	80.0%
Hotel or boarding house	8.7	5.3	5.4	4.7	5.7
Hospital (Medical Inst.)	0.4	0.1	0.2	5.8	1.7
Jail/Prison/ Detention	0.2	0.0	0.7	29.6	7.9
Drug Program/ Group Residence	1.8	0.5	4.2	5.0	2.8
Street or Other	1.6	0.9	2.4	3.0	1.9
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=508)	(n=1072)	(n=865)	(n=854)	(n=3299)
Household Composition					
Living alone	23.7%	17.0%	13.8%	9.6%	15.2%
Nuclear family*	44.1	55.5	29.3	15.0	36.3
Extended family	16.2	16.9	29.8	22.6	21.7
Friends only	10.0	6.0	14.5	7.1	9.2
Friends & family	1.2	2.7	3.8	1.2	2.4
Other or combination	0.8	0.7	1.8	0.7	1.0
Institution	2.4	0.6	5.4	41.1	12.6
Living on street	1.6	0.6	1.6	2.7	1.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=506)	(n=1072)	(n=875)	(n=854)	(n=3307)

*Nuclear family is defined as living with a spouse, or with children, or with spouse and children, or with parents.

percent) is substantially higher than for the other three modalities. Finally, over half of the intake sample described themselves as living in a nuclear (36 percent) or extended (22 percent) family. Only 15 percent reported living alone at the time of first program contact.

To further characterize the respondents' social environments as they entered treatment, questions were asked concerning the behavior of people clients knew well or lived with in the full year and the immediate three months prior to entering treatment. Table IV.5 shows respondents' reports of prevalent drug use among their associates in the three months prior to intake. Of those lived with or well known, 61 percent used heroin or other opiates nonmedically, 85 percent used marihuana or hashish, and 75 percent drank alcohol "on a fairly regular basis."

Table IV.5. Drug Use by Well Known/Lived With Others During Three Months Before Client Intake by Modality/Environment

Psychoactive Substance	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Heroin/other opiates	84.3%	70.1%	39.7%	57.2%	61.0%
Marihuana/ hashish	94.6	79.8	88.8	80.1	84.5
Other drugs	89.1	62.2	71.4	70.3	70.8
Alcohol	90.6	66.8	78.8	73.9	75.4
Other person's prescription drugs	74.9	44.4	41.4	46.2	48.8
	----------MULTIPLE RESPONSE----------				

A final item used to characterize client lifestyle or milieu prior to treatment is the amount of time the person was "at risk" (able to engage in undesirable behavior) or able to work during a defined period. To determine this, respondents were asked to report the number of days during the year before treatment that they lived in a place where they could not come and go as they pleased such as jail, a therapeutic community or a hospital -- i.e., the number of days they were not "at risk." The "at risk" variable was computed by subtracting the days not at risk from 365. The results summarized in table IV.6 show that 46 percent reported they were at risk for the entire year; about 86 percent reported they were at risk nine months or more. Stated another way, about 8 percent reported six months or more "not at risk."

Table IV.6. Number of "Days at Risk" During the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Days "At Risk"					
365 (12 months)	55.9%	63.6%	47.5%	16.3%	46.1%
335-364 (11 months)	28.7	22.2	34.9	30.7	28.7
274-334 (9-10 months)	9.4	5.3	8.3	20.8	10.7
183-273 (6-8 months)	2.7	3.4	3.0	14.8	6.1
92-182 (3-5 months)	2.1	3.0	2.5	8.3	4.1
0-91 (0-2 months)	1.2	2.5	3.8	9.1	4.3
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1104)	(n=885)	(n=859)	(n=3367)

This time-at-risk variable can be used in subsequent analysis of client behavior before treatment to control for opportunity to engage in certain behaviors. However, this measure must be used and interpreted with great care (Collins, 1981b). Preliminary analyses indicate that even where an individual reports not being at risk throughout a given period of time, there are reports of drug use, illegal activity and employment. Time at risk, then, must be conceptualized as limited opportunity rather than no opportunity, and alternative ways of conceptualizing time at risk will be explored, developed and, where appropriate, used to elucidate the interpretation of other analyses.

V. ALCOHOL USE, PROBLEMS AND TREATMENT

The TOPS intake questionnaire included a series of questions aimed at characterizing clients' involvement with alcohol. These questions asked how often alcohol was consumed, how much was typically consumed, and what kinds of problems, if any, resulted from alcohol use during the pre-treatment period. Although alcohol is usually not a primary focus of "drug" treatment programs, the data presented in this chapter demonstrate that alcohol use and problems with alcohol use are common among drug treatment clients.

A. Alcohol Use

Table V.1 presents the distribution of self-reported alcohol use during the year prior to treatment. Of the total sample, 17 percent reported that they did not drink alcohol during that year while 25 percent reported drinking daily or more frequently.

Table V.1. Self-Reported Frequency of Alcohol Use During Year Preceding Treatment, by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Frequency					
Did not drink	18.5%	21.5%	9.2%	16.2%	16.5%
Less than weekly	15.2	33.3	28.9	20.4	26.1
Weekly	5.6	8.5	10.6	6.3	8.0
2-6 times per week	23.3	19.2	30.8	27.1	24.9
Daily	7.5	8.4	8.9	10.5	8.9
More than daily	29.9	9.1	11.6	19.5	15.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1109)	(n=879)	(n=861)	(n=3368)

Clients were also asked to estimate how frequently they consumed beer, wine, and liquor and to describe the typical quantity consumed when they drank each beverage during the three months prior to treatment. From this information, a quantity-frequency index was constructed for each beverage type. For this index, frequency of consumption of each beverage was classified into five categories (did not drink the beverage, drank less than once per month, drank about once per month, drank 2-3 times per month, drank weekly or more frequently), and the reported typical quantity consumed was classified into three categories according to the amount of absolute alcohol involved (0.50 ounces or less, more than .50 but less than or equal to 2.0 ounces, and more than 2 ounces per typical drinking occasion). Fifteen categories of consumption (and nonconsumption) were defined by cross-classifying the quantity and frequency categories. These 15 consumption categories were then mapped into five drinking types (abstainers, and infrequent, light, moderate, and heavy drinkers) according to the rule illustrated in table V.2.

Table V.2. Drinking Levels Assigned to Self-Reported Quantity-Frequency Consumption Categories

	Typical Quantity (ounces absolute alcohol)*		
Typical Frequency	≤.50	>.50 to ≤2.00	>2.00
None	Abstainer	Abstainer	Abstainer
Less than once per month	Infrequent	Infrequent	Infrequent
About once per month	Light	Light	Moderate
2-3 times per month	Light	Moderate	Moderate
Weekly or more	Moderate	Moderate	Heavy

*The alcohol content of beer was assumed to be four percent; wine 12 percent; and liquor 43 percent.

Table V.3 presents the distributions of the quantity-frequency indices for each beverage type for the three-month period before treatment as well as a composite index that categorizes clients by the highest drinking level of the three beverages (e.g., a heavy beer drinker who drinks wine moderately and liquor lightly is categorized as a heavy drinker). Overall there are more abstainers (i.e., persons who reported not drinking) in methadone programs and more heavy drinkers in residential and detoxification programs. As shown, substantial proportions (38, 67, and 50 percent, respectively, for beer, wine and liquor) of the respondents reported no consumption of these beverage types during the three months prior to their first contact with the TOPS program. Inspection of the composite index, however, indicates that only 27 percent were abstainers from all three beverage types.

B. Alcohol Problems

Additionally, questions were asked concerning problems resulting from alcohol use. The problem areas posed were medical and physical; mental health or emotional; family or friends; police or legal; job, work, or school; and financial or money. Table V.4 shows the percentages of clients who reported having problems resulting from their alcohol use in the year prior to TOPS program contact. At least one of every ten clients reported having problems in each of these areas, with family related problems reported most often. Overall, 70 percent of the sample reported having no alcohol problems while 9 percent reported having one and 10 percent reported having four or more. Clients in outpatient drug free and residential programs indicated considerably more alcohol-related problems than clients in detoxification and outpatient methadone programs.

C. Alcohol Treatment

After alcohol use was assessed, clients were asked if they wanted treatment for their alcohol problem and, if so, to rate the importance of this problem. The responses presented in table V.5 show that only 19 percent perceived alcohol as a problem and wanted treatment for it; 6 percent described

Table V.3. Drinking Levels by Beverage Type for the Three Months Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Drinking Type					
Beer:					
Abstainer	32.4%	44.5%	26.8%	45.7%	38.3%
Infrequent	3.5	6.4	7.2	6.9	6.3
Light	6.9	6.8	7.3	3.8	6.2
Moderate	32.9	26.2	32.8	18.7	27.0
Heavy	24.3	16.1	25.9	24.9	22.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1104)	(n=880)	(n=860)	(n=3363)
Wine:					
Abstainer	61.9%	75.0%	59.9%	65.9%	66.7%
Infrequent	4.6	5.9	12.2	8.0	7.9
Light	3.3	4.6	6.5	3.2	4.5
Moderate	15.8	10.2	16.4	13.0	13.4
Heavy	14.4	4.3	5.0	9.9	7.5
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1105)	(n=881)	(n=862)	(n=3368)
Liquor:					
Abstainer	49.5%	61.5%	38.1%	49.2%	50.4%
Infrequent	5.2	9.1	17.4	8.9	10.6
Light	1.1	2.4	3.6	2.0	2.4
Moderate	17.0	13.6	22.0	13.1	16.2
Heavy	27.2	13.4	18.9	26.8	20.4
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1107)	(n=880)	(n=859)	(n=3365)
Composite:*					
Abstainer	23.4%	33.4%	15.7%	32.9%	27.1%
Infrequent	2.7	7.3	7.7	7.3	6.7
Light	3.0	5.3	5.9	3.0	4.5
Moderate	23.4	27.0	33.7	16.4	25.5
Heavy	47.5	27.0	37.0	40.4	36.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1104)	(n=880)	(n=859)	(n=3362)

*A respondent is categorized by the highest value across the three beverage types (e.g., a heavy beer drinker who drinks wine and liquor moderately is characterized as a heavy drinker).

Table V.4. Number and Types of Alcohol-Related Problems in the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Number of Problems					
None	72.0%	88.0%	59.2%	57.8%	70.2%
One	8.7	5.2	13.9	9.0	9.0
Two	4.2	2.6	8.9	7.3	5.7
Three	5.8	1.8	6.1	6.3	4.7
Four	4.6	1.5	5.7	7.5	4.6
Five	3.5	0.6	4.4	7.9	4.0
Six	1.2	0.3	1.8	4.2	1.8
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=517)	(n=1087)	(n=885)	(n=856)	(n=3345)
Alcohol Related Problems					
Medical	11.7%	4.2%	12.3%	19.2%	11.3%
Psychological	15.7	4.5	17.2	21.9	14.0
Family	15.1	7.3	25.4	30.3	19.2
Legal	9.1	3.6	19.4	22.9	13.6
Job/Education	8.7	3.2	14.2	21.0	11.5
Financial	17.2	3.8	17.1	21.9	14.0
	----------MULTIPLE RESPONSE----------				

alcohol use as a primary problem and 13 percent described it as a secondary or lesser problem. The remaining 81 percent did not perceive alcohol use as a problem. Other questions assessing past treatment for alcohol problems showed only 12 percent of the clients reporting prior treatment for an alcohol problem. Even fewer reported alcohol treatment in the year (8 percent) or the three months (4 percent) prior to treatment. The residential treatment modality/ environment, however, showed a much greater incidence of prior alcohol treatment (20 percent) at some time in the past than the other modalities.

Table V.5 Need for Alcohol Treatment and Prior Alcohol Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Need for Alcohol Treatment					
Primary Problem	10.6%	0.1%	6.8%	11.2%	6.3%
Secondary Problem	6.3	3.3	8.2	16.9	8.5
A Lesser Problem	6.9	3.0	4.4	4.4	4.3
No Problem	76.2	93.6	80.6	67.5	80.9
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1102)	(n=840)	(n=857)	(n=3319)
Prior Alcohol Treatment					
Ever Treated	13.8%	4.0%	13.9%	19.9%	12.2%
Treated in Year Before Admission	7.6	1.6	7.8	14.6	7.9
Treated in 3 Months Before Admission	4.5	0.8	3.7	8.0	4.0
	----------MULTIPLE RESPONSE----------				

VI. DRUG USE PATTERNS

Because drug use patterns are of major interest in the TOPS research program, client interviews were designed to gather a variety of data in this domain. The intake interview included questions on thirteen general types of drugs. In addition, the use of three specific drugs (PCP, Librium/Valium and Preludin) was also assessed. The questions focused principally on use patterns in the year and in the three months prior to treatment. The types of drugs used and the varieties of their use make it difficult to describe use patterns simply and precisely. The present chapter highlights some of the major findings in the 1979 TOPS admission cohort and illustrates some approaches to describing use patterns.

A. Nonmedical Use Patterns

Table VI.1 shows the percentages of clients using each drug once a week or more often for nonmedical purposes in the year preceding the current contact with the TOPS treatment program.

Table VI.1 Weekly or More Frequent Alcohol or Non-Medical Drug Use in Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Alcohol	66.3%	45.2%	61.8%	63.2%	57.4%
Marihuana	60.9	61.4	68.8	68.0	64.9
Inhalants	0.6	0.5	1.9	1.8	1.2
Hallucinogens	1.5	1.2	5.3	12.3	5.2
(PCP)	0.8	0.7	2.5	9.7	3.5
Cocaine	55.4	25.0	14.1	24.9	26.9
Heroin	82.7	63.3	12.0	33.0	45.1
Methadone	16.8	19.9	2.7	5.3	11.2
Other Narcotics	7.0	25.7	16.6	28.9	21.2
Minor Tranquilizers	13.0	28.2	20.5	31.5	24.7
(Librium/Valium)	12.5	27.1	19.1	30.0	23.6
Major Tranquilizers	1.7	1.4	2.2	5.0	2.6
Barbiturates	2.9	8.2	8.6	15.8	9.4
Sedatives	1.7	4.3	6.8	10.4	6.1
Amphetamines	6.1	14.3	21.1	28.5	18.4
(Preludin)	0.6	9.4	3.3	12.4	7.2
	----------MULTIPLE RESPONSE----------				

Table VI.1 indicates high-use patterns for both alcohol and marihuana. About six of every ten clients reported using alcohol and/or marihuana weekly. Further, whereas 37 percent used marihuana daily (not shown in the table), only 24 percent used alcohol that often. Weekly heroin use was reported for 45 percent of the sample with 21 percent indicating the use of other narcotics/opiates. Librium or Valium was used weekly by 24 percent during the year before treatment.

Important differences are apparent among the modalities/environments. For example, PCP, and other hallucinogens and inhalants are less commonly used substances for clients who contact methadone or detoxification programs. Cocaine was used weekly by 25 percent of clients in methadone programs and 55 percent in detoxification programs. The highest percentage of tranquilizer use is reported by clients contacting residential programs. These differences among modalities/environments may reflect different race, age, and sex compositions, drug use patterns, coping patterns and/or drug substitute patterns among clients choosing specific modalities/environments. Of course, these differences in drug-use patterns need further analysis and must be considered carefully in assessing behavioral patterns during and after treatment.

A variety of questions examined specific heroin use patterns. Table VI.2 shows that a high proportion of the clients in TOPS (77 percent) used heroin some time in their lives; 66 percent used heroin daily for at least 30 consecutive days. As expected, the highest proportions of regular and daily heroin users are in detoxification (86 percent) and methadone programs (96 percent).

Because of difficulties in classifying and summarizing drug use and drug users, attempts have been made to develop general indices representing patterns of drug use. One such measure is the Lu (1974) index of drug involvement. The empirically derived index values are based on a set of weights assigned to each drug according to its frequency of use in a given population. For each drug, clients are first categorized along a 5-point scale as a nonuser (1), an experimental user (2), an occasional user (3), a regular user (4) or a heavy user (5). Based on the number of users in each category, weights are generated which represent the proportion of individuals whose use is less than or equal to the frequency in the category of interest (e.g., the weight for an occasional user of marihuana is the proportion of subjects who use the drug at level 3 or below). For each drug, clients are assigned the weight (developed from the

Table VI.2 Patterns of Heroin Use in Any Prior Period by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
History of Heroin Use					
Never Used	11.4%	3.1%	52.7%	27.0%	23.5%
Used but Not Regularly	2.4	1.1	12.6	11.9	7.0
Used Regularly (Once a week but not daily)	1.0	2.6	3.4	6.4	3.6
Used Daily (30 or more consecutive days)	85.2	93.2	31.3	54.7	65.9
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1095)	(n=882)	(n=859)	(n=3355)

NOTE: These data indicate lifetime history of any heroin use. Clients appear in the category that indicates their greatest frequency of use at any period in their lives (e.g., a client who used heroin daily for a month necessarily used it regularly but does not appear in that category).

entire population of users) that corresponds to his/her category of use (e.g., a client classified as an experimental user of marihuana and nonuser of heroin would receive the respective category weights computed for those drugs). The final involvement index for each individual consists of an arithmetic mean of his/her usage weights for each drug. According to Lu, the resulting index will be normally distributed with a mean of .50 and variance of .083 and will inherently place greater weight on drugs that are less commonly used. Thus, the average user from the sample will have an involvement index of .50; users with greater or less involvement will have correspondingly higher or lower values.

Although the construct validity of the Lu index requires further examination, the index offers a promising starting point for an overall index.

O'Donnell, Voss, Clayton, Slatin, and Room (1976) found the Lu index useful in summarizing drug use patterns in a nationwide survey of young men. In the TOPS data the Lu index weights were computed both within and across modalities/environments. The average weight and standard deviation of the across modality/environment analysis are presented in table VI.3. As shown, the means and standard deviations generally correspond to those of the theoretical distribution proposed by Lu (1974). The results across modalities suggest that residential and drug free clients show the greatest amount and the least amount of drug involvement respectively. Detoxification and methadone clients show comparable levels of involvement, both of which fall at the mean of the distribution. Other analyses attempting to summarize drug use patterns will examine the Lu index in greater detail.

Table VI.3 Mean and Standard Deviation of the Lu Index of Drug Use Involvement by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Mean	0.499	0.500	0.480	0.519	0.500
Standard Deviation	0.082	0.103	0.116	0.131	0.112

NOTE: The Lu index is a summary measure of drug use patterns that is based on weights assigned to each drug according to its frequency of use in a given population.

B. Primary Drug of Abuse

Another approach to understanding drug use patterns was to examine clients' primary drug of abuse. This was done (a) by considering clients' self-reports within modality, (b) by cross-classifying primary drug problems with frequency of other drug use and (c) by comparing TOPS and CODAP data.

Table VI.4 examines client's self-reports by modality of their "primary drug problem" upon entering treatment. As shown, 43 percent of all TOPS clients report heroin as their primary drug problem. An additional 14 percent report either methadone or other narcotics as their primary problem. Looking

Table VI.4 Client Self-Report of Primary Drug of Abuse at Admission and Frequency of Use of Primary Drug in the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Primary Drug Problem					
Alcohol	9.6%	0.1%	6.8%	9.3%	5.7%
Marihuana	1.0	0.5	17.5	9.2	7.2
Inhalants	0.0	0.0	0.3	0.6	0.2
Hallucinogens*	0.0	0.0	2.9	3.5	1.6
PCP	0.0	0.0	0.0	2.1	0.5
Cocaine	1.9	1.6	6.0	5.4	3.8
Heroin	80.0	62.4	10.3	28.9	43.3
Methadone	0.4	12.5	0.5	2.3	4.9
Other Narcotics	3.5	12.2	9.5	9.8	9.5
Minor Tranquilizer*	1.3	0.5	6.6	2.3	2.6
Librium/Valium	0.0	0.2	0.5	0.2	0.2
Major Tranquilizer	0.2	0.0	0.1	0.5	0.2
Barbiturates	0.0	0.3	2.0	2.3	1.2
Sedatives	0.0	0.4	1.3	1.2	0.8
Amphetamines*	1.2	0.4	8.4	5.1	3.8
Preludin	0.0	1.0	0.1	0.6	0.5
Other	0.1	0.5	0.4	1.7	0.7
No Problem	0.8	7.4	26.8	15.0	13.3
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=519)	(n=1109)	(n=862)	(n=835)	(n=3325)
Primary Drug Use					
No Use	0.8%	10.3%	15.5%	13.2%	10.8%
Monthly or Less	3.7	11.4	19.0	10.6	12.0
Weekly or Greater	7.1	18.0	27.3	24.3	20.3
Daily	88.4	60.3	38.2	51.9	56.9
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=518)	(n=1104)	(n=851)	(n=827)	(n=3300)

*Data for PCP, Librium/Valium, and Preludin are included in lines below their drug types - hallucinogens, minor tranquilizers, and amphetamines, respectively. Data for these three specific drugs are not included in the data for the drug types.

within modalities shows that over 80 percent of clients entering either methadone maintenance or detoxification treatment report heroin, methadone, or "other narcotics" as their primary drug of abuse. Nearly one-quarter of the outpatient drug free clients report their primary drug problem as alcohol or marihuana and an additional 27 percent report no primary drug problem. For residential clients heroin is the most frequently mentioned primary problem (29 percent) although 15 percent indicate no drug problem.

These data have important implications for treatment outcome, especially posttreatment drug usage patterns and the appropriate utilization of treatment services. Clearly the clients in each of the modalities/environments report rather different types of drug problems. These problems may require very different treatment approaches and very different expectations about the types of outcomes that can be achieved with various types of drug users. These are areas for additional careful and thoughtful research.

A curious phenomenon involves clients entering programs who report no primary problem drug (see table VI.4). Only a small proportion of these individuals report using drugs on a weekly or greater basis as reference to table VI.5 will clarify. Preliminary analyses attempting to describe these individuals indicate that they are likely to be referred by the criminal justice system and are likely to use alcohol or marihuana more than other types of drugs. It is possible that these clients are unwilling to admit that they have a drug problem. Alternatively, it may be that they may honestly do not perceive themselves as having a "drug problem" despite their use of drugs. This notion is at least plausible in view of the fact reported earlier that the "no problem" clients were often referred to TOPS by the criminal justice system. That is, the person referring the client may have perceived him/her as having a problem though the client did not.

Table VI.4 also reports frequency of use of the primary drug. For clients who indicated no primary drug problem, the drug with the most frequent reported usage in the past year was counted as their primary drug. As shown, 57 percent of all clients report at least daily use of their primary drug during the year before treatment. Within the outpatient detoxification programs, 88 percent report daily use of their primary drug. However, nearly 11 percent of respondents reported no use in the past year of the drug that they named as their primary drug.

Table VI.5 shows the percent of persons reporting various primary drugs of abuse who use each drug on a weekly or greater basis summed across the four modalities/ environments. Inspection of this table indicates considerable use of other drugs in addition to the primary problem drug. For instance, of those respondents listing heroin use as their primary problem, 64 percent used marihuana and 42 percent used cocaine weekly or more often. Over one-half of those listing no primary drug problem used alcohol and/or marihuana weekly or more frequently, 12 percent report weekly or greater minor tranquilizer use, 8 percent report amphetamine use and 9 percent report heroin use in the year prior to treatment.

Drugs used most by primary users of other drugs are alcohol, marihuana, minor tranquilizers (including Librium and Valium) and amphetamines. Marihuana is used by at least 53 percent of primary users of other drugs except Librium and Valium primary users who appear to constitute a special group. Alcohol is also used weekly or more often by over 50 percent of primary users of other drugs except for those whose primary problem is Preludin.

Table VI.6 compares TOPS and CODAP reports of primary drug problems for 1979, deleting individuals reporting no primary drug. In these analyses the TOPS data generally are similar to CODAP reports. The major differences appear to involve more "other narcotics" abusers in TOPS than CODAP, especially in the residential programs. Another major difference involves the inclusion of individuals reporting alcohol as a primary problem in TOPS detoxification programs. TOPS did involve two detoxification programs that provided services to various types of alcohol and drug users. By the definition of eligibility for TOPS, individuals with alcohol problems who also misused other drugs were included in TOPS. Table VI.5 shows that many individuals reporting alcohol as a primary problem also used marihuana (63 percent), minor tranquilizers (18 percent) and amphetamines (27 percent) weekly or more often.

Table VI.7 compares the TOPS data with the CODAP data on frequency of use prior to admission. Note that CODAP measures this use for a one-month period before treatment while TOPS measures it for a three-month period. The major

Table VI.5 Weekly or Greater Use of Various Drugs by Treatment Clients Classified According to Their Primary Drug Problem

Primary Drug Problem	N	Weekly or Greater Use of Drugs: Alcohol	Marihuana	Inhalant	Hallucinogen	Cocaine	Heroin	Illegal Meth	Other Narcotics	Minor Tranq	Major Tranq	Barbiturate	Sedatives	Amphetamines
Alcohol	188	89.7%	63.1%	1.6%	7.5%	5.9%	2.7%	0.0%	7.0%	18.3%	7.0%	5.9%	4.3%	27.3%
Marihuana	239	64.7	94.9	0.4	8.1	10.9	4.2	2.1	11.1	16.7	3.4	9.4	8.9	21.0
Inhalants	8	50.0	75.0	62.5	12.5	12.5	0.0	0.0	0.0	25.0	12.5	12.5	37.5	37.5
Hallucinogens	54	77.8	85.2	3.7	66.7	20.4	7.4	0.0	16.7	31.5	3.7	16.7	11.1	46.3
PCP*	18	100.0	94.4	0.0	44.4	16.7	0.0	0.0	0.0	11.8	11.1	16.7	0.0	38.9
Cocaine	125	68.6	71.5	3.2	9.8	81.5	27.2	6.6	13.6	23.2	1.6	8.9	5.7	22.7
Heroin	1439	52.6	64.2	0.4	1.5	42.2	87.8	15.6	17.6	20.9	0.8	6.4	3.5	10.6
Illegal Methadone	163	50.6	55.0	0.0	1.9	17.3	20.9	66.3	7.0	34.2	2.5	12.6	5.1	5.1
Other Narcotics	317	50.2	52.1	1.0	1.0	11.9	29.5	5.1	78.0	37.5	3.8	11.2	7.6	19.9
Minor Tranquilizers	88	54.1	59.8	0.0	6.9	9.2	8.0	3.5	25.6	75.3	5.8	20.0	13.8	17.7
Librium/Valium*	8	62.5	37.5	0.0	0.0	12.5	12.5	0.0	37.5	87.5	0.0	25.0	12.5	12.5
Major Tranquilizers	6	66.7	83.3	0.0	0.0	16.7	0.0	0.0	33.3	50.0	66.7	50.0	33.3	60.0
Barbiturates	39	76.9	73.7	2.6	13.2	23.1	10.3	5.1	29.0	60.5	15.4	73.7	34.2	38.5
Sedatives	25	72.0	70.8	4.0	16.7	8.3	4.4	8.0	29.2	52.2	8.0	37.5	60.0	28.0
Amphetamines	125	66.4	75.2	2.4	8.8	12.9	6.4	0.8	17.7	28.0	2.4	13.8	9.6	83.2
Preludin*	17	23.5	76.5	0.0	0.0	17.7	35.3	6.3	41.2	56.3	0.0	29.4	11.8	88.2
Other	24	66.7	54.2	4.2	8.3	20.8	25.0	8.7	50.0	26.1	4.2	20.8	8.3	20.8
No Problem	442	51.4	54.4	1.4	3.5	6.0	8.9	1.2	6.7	12.3	1.2	3.5	2.1	7.7
Missing	64	66.7	75.0	9.7	19.7	15.0	11.5	3.3	37.7	29.5	8.2	16.4	16.4	53.2
All Respondents	3389	57.4	64.9	1.2	5.2	26.9	45.1	11.2	21.2	24.7	2.6	9.4	6.1	18.4

*Data for clients mentioning a specific drug (PCP, Librium/Valium, Preludin) as the primary problem are not included in the data for the more general drug types (hallucinogens, minor tranquilizers, amphetamines).

Table VI.6 Primary Problem Drug at Admission by Modality/Environment for 1979 CODAP Clients and 1979 TOPS Respondents

Primary Problem Drug	Drug Free Outpatient		Drug Free Residential		Outpatient Methadone		Detoxification		All Respondents	
	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS
Heroin	18%	14%	31%	34%	83%	68%	88%	81%	41%	50%
Other Narcotics	5	14	6	14	17	27	10	3	7	17
Marihuana	28	24	14	11	-	<1	-	<1	17	8
Barbiturates	5	3	8	3	-	<1	<1	-	4	1
Amphetamines	9	11	10	7	-	1	-	1	7	4
Alcohol	8	9	6	11	-	<1	-	10	5	7
Cocaine	5	8	7	6	-	2	-	2	4	4
Hallucinogens	4	4	4	4	-	-	-	-	3	2
PCP	5	-	6	3	-	-	-	-	4	<1
Tranquilizers	5	10	3	4	-	<1	<1	1	3	4
Other Sedatives and Hypnotics	4	2	2	1	-	<1	<1	-	3	<1
Other Drugs	4	<1	3	2	-	<1	-	<1	2	<1
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
n =	103,505	631	31,201	710	23,595	1,027	35,973	515	194,274	2,883

Included in CODAP figures are clients admitted to or discharged from treatment in 1979. Primary drug of abuse at admission was designated by a program clinician. Included in TOPS figures are those first contacting the TOPS program seeking admission in 1979. Data are based on respondents' self reports of primary drug problem in 3 months preceding program contact. CODAP clients with no reported problem are excluded as were 442 TOPS respondents reporting no drug problem.

Table VI.7 Frequency of Primary Problem Drug Use at Admission for 1979 CODAP Clients and TOPS Respondents

Frequency of Use of Primary Drug	Primary Drug at Admission																													
	Heroin		Other Narcotics		Marihuana		Barbiturates		Amphetamines		Alcohol		Cocaine		Hallucinogens		Tranquilizers		Other Sedatives		Other		All Respondents	
	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS	CODAP	TOPS
No Use	20%	5%	12%	8%	10%	5%	23%	17%	26%	6%	11%	4%	26%	11%	30%	22%	14%	2%	16%	0%	14%	13%	18%	6%
3 Times a Month or Less	3	5	3	10	6	9	7	9	9	17	5	8	12	11	17	37	7	14	10	22	10	27	6	8
At Least Weekly But Not Daily	8	10	12	21	42	30	28	23	29	31	29	42	33	46	36	31	24	25	36	33	34	33	22	20
Daily or More Often	69	80	73	61	42	56	42	51	36	46	55	46	29	32	17	10	55	59	38	45	42	27	54	66
TOTAL %	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
n =	94,112	1370	17,290	408	37,946	231	9,131	35	15,213	121	17,178	185	8,974	122	6,412	51	7,114	80	5,486	18	5,558	15	224,414	2636

*For CODAP clients these data are for the month preceding admission. For TOPS respondents, these data are for the three months preceding admission.

difference between CODAP and TOPS data is that the latter shows greater use of the primary problem drug prior to treatment. This result may be explained in part by the different pretreatment times covered. However, TOPS also reports more daily use patterns than CODAP.

C. Drug Use Related Problems

Table VI.8 indicates numbers and types of drug-related problems in the year prior to entering the TOPS programs. Overall 80 percent of the clients reported one or more drug use associated difficulties: 36 percent had medical problems; 47 percent had psychological problems; 55 percent had family problems; 29 percent had legal problems; 34 percent had job-related problems; 55 percent had financial problems. These data suggest the need for a multi-service treatment approach. This need will become even more apparent from the intreatment data reported in the next chapter which seem to suggest that clients need but are not receiving services in many of these areas.

Table VI.8 Numbers and Types of Drug Related Problems in the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Number of Problems					
None	10.6%	24.1%	22.1%	18.5%	20.1%
1	9.8	17.4	13.7	10.3	13.4
2	16.9	17.5	15.7	12.2	15.6
3	25.5	15.8	16.0	14.7	17.0
4	20.7	12.4	16.1	17.3	15.9
5	11.9	8.7	12.0	15.3	11.8
6	4.6	4.1	4.4	11.7	6.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=521)	(n=1098)	(n=888)	(n=857)	(n=3364)
Drug Related Problems					
Medical	44.2%	28.1%	35.5%	40.9%	35.8%
Psychological	61.2	35.4	50.6	50.0	47.1
Family	54.3	49.7	55.3	61.1	54.8
Legal	20.2	17.9	28.1	49.4	29.0
Job/Education	31.3	29.3	32.9	41.0	33.5
Financial	79.1	57.3	42.0	52.4	55.4
	----------MULTIPLE RESPONSE----------				

VII. DRUG ABUSE TREATMENT AND MENTAL HEALTH

Many clients entering drug treatment programs have been treated previously. Of clients entering treatment during the years 1969-1973 in the DARP study Sells and Simpson (1976) reported 49 percent had previously received drug treatment. That percentage decreased from 1969 to 1973, especially among those reporting 3 or more previous treatment experiences. As expected, this pretreatment variable was strongly related to age, with older clients reporting more previous treatment experiences than younger clients. The number reporting previous treatment was higher among clients over 30 years of age and lower for those under 18. One of the findings in a report based on the DARP information for clients admitted to NIDA-assisted programs from 1975 to 1978 was that 52 percent of these clients had had previous drug abuse treatment (U.S. General Accounting Office, 1980).

Based on this past research about prior treatment experience, we would expect for many TOPS clients to have treatment histories. In the 1979 TOPS cohort almost 60 percent had at least one prior treatment episode. This chapter first examines the nature and extent of the treatment experience of TOPS clients. Next, information is presented about the referral source and the nature of health insurance coverage for the current TOPS program admission. Finally, the association between mental health and treatment is examined.

A. Previous Drug Treatment

Table VII.1 presents information on prior drug treatment of TOPS clients. Nearly 60 percent had received some kind of drug abuse treatment prior to their current admission. The highest percentages of prior treatment were reported by clients in detoxification (76 percent) and methadone maintenance (69 percent) programs. Fifty percent of the methadone clients and 59 percent of the detoxification clients had been treated in the year prior to the TOPS program admission. Thirty-seven percent of clients in outpatient drug free programs reported having some kind of prior drug abuse treatment and 23 percent were in treatment in the past year.

The total number of prior admissions varies considerably across treatment modalities. In table VII.1 those reporting three or more previous admissions ranged from 17 percent of clients in outpatient drug free programs to nearly 52 percent of clients entering detoxification programs. The TOPS clients appear to have had considerably more experience with treatment than the CODAP

Table VII.1 Drug Abuse Treatment Prior to Current Admission, Number of Prior Admissions and Types of Prior Drug Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Drug Abuse Treatment Prior to Current Admission					
Ever Treated	75.7%	69.2%	37.3%	53.4%	59.9%
Treated in Year Before Admission	58.9	49.6	22.9	34.8	40.1
Treated in 3 Months Before Admission	40.7	35.8	13.2	24.2	27.5
	----------MULTIPLE RESPONSE----------				
Number of Prior Admissions					
None	24.0%	29.7%	63.7%	50.5%	42.8%
One	11.1	16.2	12.6	15.3	14.2
Two	12.9	13.3	6.8	10.4	10.9
Three	9.1	10.6	4.6	6.2	7.7
Four	6.1	6.7	2.9	4.4	5.0
Five or More	36.8	23.5	9.4	13.2	19.4
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=495)	(n=1073)	(n=824)	(n=786)	(n=3178)
Type of Prior Drug Treatment					
No Drug Treatment	23.7%	29.4%	63.4%	50.3%	42.5%
Detoxification Only	25.7	8.9	4.2	4.2	9.2
Maintenance Only	3.4	18.0	1.7	8.5	9.1
Residential Only	3.0	2.1	4.2	8.6	4.4
Outpatient Drug Free Only	0.6	0.6	4.4	2.7	2.1
Other Only	1.2	0.5	3.6	1.7	1.7
Multiple	42.4	40.5	18.5	24.0	31.0
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=495)	(n=1075)	(n=787)	(n=827)	(n=3184)

population. Table VII.2 shows that 19 percent of TOPS clients had five or more prior treatment admissions compared to only 8 percent of the CODAP population.

Table VII.2 Prior Drug Treatment Experiences for 1979 CODAP Clients and TOPS Respondents

	CODAP	TOPS
Number of Prior Treatment Experiences		
None	48%	43%
One	21	14
Two	12	11
Three	7	8
Four	4	5
Five or more	8	19
TOTAL	100%	100%
	(n = 225,314)	(n = 3,178)

Among those clients who have had some previous drug abuse treatment, experiences in more than one modality seem to be common (see table VII.1). Nearly 54 percent of all those reporting prior treatment have been in more than one treatment modality (31 percent of the entire sample). Sizeable percentages of clients currently enrolled in detoxification and methadone maintenance programs have been in those types of treatment previously. One-third of detoxification and one-fourth of methadone maintenance clients previously treated listed their current modality as their only type of treatment experience. Previously treated clients currently in residential or outpatient drug free programs were not so consistent, showing rather eclectic patterns of previous treatment.

The average age at first admission to treatment was 25. Outpatient drug free and residential clients were, on average, a year younger and methadone and outpatient detoxification a year, and a year and one-half older, respectively (table VII.3). Almost a third of all clients were 20 years old or younger when they first entered treatment. Outpatient drug free clients were most likely (40 percent) and detoxification clients least likely (22 percent) to have been 20 or younger at first treatment admission.

Table VII.3 Age at First Admission to a Drug Treatment Program by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Age at First Admission					
Less than 18	7.1%	6.6%	20.4%	15.4%	12.6%
18-20	14.7	19.4	19.7	20.0	18.9
21-25	37.4	35.9	30.3	33.8	34.1
26-30	19.8	19.9	16.8	19.4	19.0
31-44	17.0	16.1	10.6	9.7	13.1
Over 44	4.0	2.1	2.2	1.7	2.3
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=505)	(n=1101)	(n=877)	(n=860)	(n=3343)
Average Age at First Admission*	26.1	25.3	23.4	23.6	24.5

*In contrast to other entries in the table, these figures are mean values rather than percentages.

B. Current Drug Treatment

It is clear from the preceding section that the majority of TOPS clients has had prior treatment experience. This section examines data on clients' referral source and health insurance coverage for their TOPS program admission. Table VII.4 shows that clients in detoxification and methadone maintenance programs have been referred primarily by themselves (52 percent and 51 percent, respectively) or by their families or friends (36 percent and 28 percent,

respectively). In addition, community agencies appear to be a common source of referral for clients in methadone maintenance (14 percent). The most prevalent source of referrals to residential and outpatient drug free programs (35 percent and 28 percent respectively) is the criminal justice system and other legal sources. Also, community agency, family or friends and self-referrals each account for 17 to 23 percent of the referrals to these two treatment modalities.

Table VII.4 Principal Source of Referral for Current Admission and Health Insurance Type by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Source of Referral					
Self-referral	51.5%	51.2%	20.8%	20.1%	35.4%
Family/friends	36.0	28.5	22.6	17.1	25.2
Medical	4.6	2.2	6.5	6.8	4.9
Community Agency	4.4	14.3	16.9	18.4	14.5
Criminal Justice or Legal	2.7	3.6	27.6	35.3	17.8
School	0.0	0.1	3.4	0.0	0.9
Employer	0.6	0.1	1.4	0.8	0.7
Other	0.2	0.0	0.8	1.5	0.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1109)	(n=888)	(n=864)	(n=3383)
Insurance Type					
No Health Insurance	55.2%	58.7%	64.0%	80.4%	65.0%
Blue Cross	12.2	8.3	9.2	6.5	8.7
Other Private	5.2	10.1	13.2	5.1	8.9
Medicaid or Other Public	26.0	20.4	9.6	3.9	14.3
CHAMPUS or Other Military	0.4	0.6	0.8	1.9	0.9
Multiple	0.2	1.4	1.3	0.7	1.0
Other	0.8	0.5	1.9	1.5	1.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1100)	(n=869)	(n=830)	(n=3319)

In the comparison of TOPS and CODAP data (table VII.5) the most striking difference is that TOPS clients are more likely to report that family or friends sent them or suggested they come to the program.

Table VII.4 also reports health insurance coverage for TOPS clients. Almost two-thirds report having no health insurance. Of those that do have insurance, more than 40 percent have Medicaid or other public coverage but one out of every five clients reports having either Blue Cross or other private health insurance. Detoxification and methadone program clients are most likely to have medical insurance and most likely to be insured by public programs. Table VII.5 compares the distributions of different types of health insurance in TOPS and CODAP and shows them to be very similar.

C. Mental Health and Treatment

Various measures have been used to assess depression among substance abusers (Rounsaville, Weissman, Rosenberger, Wilber and Kleber, 1979; Wehl and Turner, 1980). The length and clinical nature of most of the proposed scales precluded their extensive use in TOPS. The indicator of depression used in TOPS is derived from three items focusing on the negative signs of not getting out of bed, suicidal thoughts and suicide attempts. These questions in some form are included in most depression scales. A validation study testing these items against other scales is being undertaken.

The TOPS data based on the three items support the basic finding of other investigators that depression is common among clients in drug treatment. Table VII.6 indicates that clients manifest depressive signs such as not being able to get out of bed and having thoughts about or attempting suicide. Overall, 60 percent of clients reported one or more depressive symptoms in the year preceding intake. Suicidal thoughts in the year preceding program contact were reported by 29 percent and an additional 10 percent reported suicidal attempts during that period. Suicidal attempts were higher among clients in residential or outpatient drug free programs than among detoxification or methadone maintenance clients (14 and 15 percent versus 6 percent).

Clients in residential or outpatient drug free treatment programs more frequently reported having been treated for mental health problems (about 30 percent) compared to those enrolled in detoxification or methadone maintenance programs (about 15 percent). More than 22 percent of all clients reported prior treatment for a mental health problem and nearly 10 percent had been treated during the year prior to their current drug abuse treatment. The

large discrepancy between the number of clients indicating depression and the number reporting mental health treatment makes it appears that though many drug treatment clients should benefit, few are receiving mental health treatment.

Table VII.5 Source of Referral and Type of Health Insurance for 1979 CODAP Clients and TOPS Respondents

	CODAP	TOPS
Referral Source		
Self-referral	41%	35%
Medical Service	6	5
Community Service Agency or Individual	12	15
Family/friend	12	25
Employer	1	1
School	3	1
Federal/state/county probation and parole	16	9
TASC and other non-voluntary	4	8
Bureau of Prisons	1	1
Veterans Administration	-	*
Other	4	*
	100%	100%
	(n = 226,962)	(n = 3,389)
Type of Health Insurance		
Blue Cross/Blue Shield	9%	9%
Other private	9	9
Medicaid/Medicare other public	18	14
CHAMPUS, other military	1	1
Other insurance	-	2
No insurance	63	65
	100%	100%
	(n = 231,282)	(n = 3,319)

*Less than 0.5 percent.

Table VII.6 Depression Indicators in the Year Preceding Admission and Treatment for Mental Health Problems by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Depression Indicators*					
None	42.5%	42.8%	36.7%	38.0%	39.9%
Could Not Get Out of Bed	22.3	27.4	15.7	16.8	20.8
Suicidal Thoughts	29.4	24.2	33.6	30.3	29.1
Suicide Attempts	5.8	5.6	14.0	14.9	10.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1102)	(n=865)	(n=857)	(n=3344)
Mental Health Treatment					
Never Treated	84.8%	88.0%	65.5%	72.4%	77.7%
Treated But Not in Year Before Admission	11.2	7.2	19.0	13.5	12.5
Treated in Year Before But Not in 3 Months Before Admission	1.7	2.2	6.4	5.9	4.1
Treated in 3 Months Before Admission	2.3	2.6	9.1	8.2	5.7
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=520)	(n=1105)	(n=861)	(n=856)	(n=3342)

*Clients were classified according to the most severe symptom reported.

VIII. ILLEGAL ACTIVITY AND CRIMINAL JUSTICE INVOLVEMENT

Past research (Drug Use and Crime, 1976; Gandossy, Williams, Cohen, and Harwood, 1980) has demonstrated the substantial involvement of drug users in criminal activity and a high likelihood that they will enter the criminal justice system. The TOPS data include a number of items relating to the crime/drug issue. These data are examined by drug treatment modalities/environments as well as by types of involvement in the criminal justice system (no involvement, involvement through TASC programs and involvement other than through TASC).

A. Legal Status and Criminal Justice Involvement by Modality/Environment

As shown in the top portion of table VIII.1, one out of every three clients was under the supervision of the criminal justice system when he or she contacted the TOPS treatment program. Fourteen percent were on probation, 5 percent were on parole, 7 percent were on bail awaiting formal disposition of charges, and 5 percent were in jail or prison.

Differences also exist among programs in the percentage of clients in a formal legal status. Only 14 and 15 percent, respectively, of clients in outpatient detoxification and methadone programs have a legal status compared to 38 percent in outpatient drug free programs. One of every five outpatient drug free clients reports he/she was on probation at the time of contacting the program.

Residential TOPS clients were most likely (60 percent) to report a legal status at the time of initial program contact with 24 percent indicating they were on probation. In addition, 19 percent of the clients from residential programs were in jail or prison at the time of initial program contact compared to less than one percent of those from other modalities. This suggests that the residential programs serve as a transition from jail for those with drug problems. This interpretation is supported by other data which indicate that about half of the residential modality clients were incarcerated in the three months prior to treatment, and that the criminal justice system is a principal referral source to residential and outpatient drug free programs (see table VII.4).

As mentioned earlier, formal programs exist for the diversion of drug-abusing offenders from the criminal justice system. Many of these diversion programs come under the general designation of Treatment Alternatives to

Table VIII.1 Legal Status, Criminal Justice Involvement and Prior Incarcerations at Admission by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Legal Status					
No Legal Status	86.4%	84.0%	61.5%	39.8%	67.2%
Probation	5.2	5.3	20.0	24.1	14.0
Parole	4.0	5.9	3.3	4.8	4.7
On Bail	3.6	4.1	11.0	10.3	7.4
In Jail	0.2	0.2	1.3	18.8	5.1
Other	0.6	0.5	2.9	2.2	1.6
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1112)	(n=890)	(n=865)	(n=3389)
Criminal Justice Involvement					
TASC Client	1.2%	1.4%	19.3%	13.6%	5.1%
Non-TASC Criminal Justice	13.8	14.2	22.2	48.2	24.7
No Criminal Justice Involvement	85.0	84.4	58.5	38.2	66.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=522)	(n=1104)	(n=888)	(n=855)	(n=3369)
Prior Incarceration					
Ever in jail	79.6%	80.6%	66.9%	88.6%	79.1%
In Jail in the Year Before Treatment	31.6	30.5	42.3	70.5	44.2
In Jail in the 3 Months Before Treatment	13.4	13.2	25.0	50.4	26.3
	----------MULTIPLE RESPONSE----------				

Street Crime (TASC). TASC programs were initially supported under funding by the Law Enforcement Assistance Administration, later continued under state and local auspices. As shown in the middle portion of table VIII.1, 9 percent of TOPS clients in 1979 came to the treatment programs under TASC supervision. The outpatient detoxification and outpatient methadone programs served very few TASC clients; almost all TASC clients were placed in outpatient drug free and residential programs.

Overall, 25 percent of TOPS participants were classified as non-TASC criminal justice clients. As would be expected from the legal status discussion above, outpatient drug free and residential clients were more likely than clients in the other two modalities to be under the supervision of a component of the criminal justice system. It is likely that a substantial proportion of these non-TASC criminal justice clients came to treatment as a result of their criminal justice system involvement. Even if a formal mechanism is not used, the suggestions of criminal justice system personnel like judges and probation officers may provide the immediate reason for initiating contact with a drug treatment program. Furthermore, legal or criminal justice problems are often related to and may cause family and job problems and, thus, may be an indirect cause of seeking treatment.

The bottom portion of table VIII.1 shows that 79 percent of TOPS clients have spent time in jail. Forty-four percent had spent time in jail in the year before treatment, and 26 percent of the clients were in jail in the three months prior to admission to the TOPS program. One-half of the residential clients were in jail during the three months prior to treatment

B. Arrest History by Modality/Environment

Table VIII.2 shows percentages of TOPS clients reporting arrests in three time periods. At the intake interview, respondents reported the numbers of times they had been arrested for 19 different kinds of offenses. The offenses have been grouped into the five categories shown in table VIII.2: violent offenses, robbery, income generating property offenses, drug related offenses, and other victimless offenses. As indicated in the "all respondent" columns, the percentages of TOPS clients who have been arrested are substantial and very high compared to percentage estimates for general populations (Shannon, 1977; Wolfgang and Collins, 1978). Data for a 1945 Philadelphia male birth cohort sample, for example, indicated that 47 percent of the sample had a

Table VIII.2 Self-Reported Arrests for Offense Categories by Modality/Environment: Ever Arrested, Arrested in Year Before Treatment and Arrested in Three Months Before Treatment

Offense Categories	Outpatient Detoxification (n=522)			Outpatient Methadone (n=1112)			Outpatient Drug Free (n=890)			Residential (n=865)			All Respondents (n=3389)		
	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months
Violent	22.2%	2.6%	0.4%	29.7%	4.6%	2.0%	16.5%	3.6%	1.1%	37.2%	11.9%	4.1%	26.9%	5.9%	2.1%
Income Generating Prop.	58.8	11.7	2.6	56.8	13.4	4.5	43.9	14.9	7.7	75.0	40.7	17.7	58.4	20.6	8.5
Drug Related	51.1	7.4	2.3	55.3	7.5	2.6	40.1	14.7	8.9	53.9	18.5	7.6	50.3	12.2	5.5
Other Victimless	42.3	11.6	4.9	38.8	7.4	2.6	35.6	15.2	6.4	58.3	23.1	9.3	43.5	14.1	5.7
Miscellaneous	29.2	3.3	0.6	34.5	4.9	1.8	33.6	8.3	4.1	46.2	17.5	6.7	36.4	8.8	3.6
All Offenses*	82.5	31.1	11.5	82.1	30.4	12.4	69.8	42.7	25.0	91.1	68.8	37.4	81.2	43.9	22.2

*This is not the total of the offense categories because of multiple responses.

recorded police contact for at least one nontraffic offense by age 30. Comparable TOPS data show 81 percent of the clients reporting arrest at some time.*

Twenty-two percent of those in the Philadelphia birth cohort sample were arrested for offenses classified as index offenses in the Federal Bureau of Investigation's Uniform Crime Reports (Wolfgang & Collins, 1978). Index offenses are homicide, forcible rape, aggravated assault, robbery, burglary, larceny and auto theft. These are roughly comparable with the violent offense, robbery and income generating property offense categories in rows one, two, and three of table VIII.2. Those three rows show that 15 percent of TOPS clients reported at least one arrest for a violent offense, 20 percent reported at least one robbery, and 54 percent reported at least one arrest for a serious property offense. Although offense categorizations are not identical in the TOPS and Philadelphia cohort data, it is clear that TOPS clients are more likely than those in a normal population to have been arrested and to have been arrested for a serious crime.

While it is clear that TOPS clients are disproportionately more likely to be arrested than those in a normal population, comparison of TOPS clients with profiles of those in the Client Oriented Data Acquisition Process (CODAP) indicates TOPS and CODAP clients are quite similar. Table VIII.3 reports percentages of these two drug treatment client groups who were arrested in the 24 months prior to treatment.

Returning to the comparison in table VIII.2 of the percentages of clients who reported arrests across modalities and time periods, consistent patterns are shown with only two exceptions -- for every offense category and for each time period, residential clients showed more arrests. Nearly three out of four residential clients reported at least one arrest for an income generating property offense; almost one of five (17 percent) of the residential clients reported an arrest for an income generating property crime in the three months immediately prior to treatment.

Further comparison of differences in reported arrests by modality indicates two general patterns. First, the reported arrest patterns of outpatient detoxification and outpatient methadone clients are similar. A second general pattern is found in the comparison of the three non-residential modalities: Outpatient drug free clients tend to report arrests in the recent past. This

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*The "traffic" offense of driving while intoxicated is included in the TOPS data.

suggests that outpatient drug free clients may be more active criminally. Outpatient detoxification and outpatient methadone clients are generally more likely to have ever been arrested but less likely to have been arrested in the year before treatment. This finding is consistent with the age characteristics of the clients within modalities and with what is known about the age/arrest relationship. More specifically, clients from outpatient detoxification and outpatient methadone programs tend to be older than clients from the outpatient drug free and residential programs. Past research and official crime statistics consistently confirm that younger persons, especially males, are disproportionately likely to engage in and be arrested for criminal behavior (Collins, 1981a; U.S. Department of Justice, Federal Bureau of Investigation, 1979). The TOPS data are consistent with these findings although age differences do not fully explain the relatively high arrest reports of the residential clients. Even though these clients tend to be younger and would thus be expected to have high recent arrest records, the residential clients also report relatively high rates of "ever" being arrested. Residential clients appear to be unique in other ways, and their disproportionate arrests must be explained on other than an age basis. These issues will be examined in more detail in subsequent analyses.

Table VIII.3 Number of Arrests Within 24 Months Preceding Admission for 1979 CODAP Clients and TOPS Respondents

	CODAP	TOPS
Arrests		
None	51%	48%
1	25	23
2	11	11
3	5	6
4	3	4
5	2	2
6 - 10	2	4
11 or more	1	2
TOTAL	100%	100%
	(n = 234,415)	(n = 3,321)

C. Arrest History by Current Criminal Justice System Involvement

Table VIII.4 compares the reported arrests of TOPS clients who (1) were referred from TASC programs, (2) were involved with the criminal justice system outside the TASC programs at intake, or (3) had no criminal justice system involvement at intake.

The results indicate TASC and non-TASC criminal justice clients are very similar to each other. Approximately equal percentages of TASC and non-TASC clients report "ever" being arrested for the different offense categories though there are differences between them in the percentages who report recent arrests. In general, for both the one year and three month periods preceding treatment, the TASC clients were more likely to report an arrest. For example, for the income generating property offense category, 53 percent of TASC clients reported an arrest in the year before treatment compared to 39 percent of the non-TASC clients. Clients who reported no criminal justice system involvement at time of intake, not surprisingly, are much less likely than the two criminal justice involved categories to report arrests in any time period and in any offense category.

Thus, while the total arrest experiences of TASC and non-TASC criminal justice TOPS clients are similar, TASC clients appear to be more seriously involved in recent criminal behavior -- at least to the extent that arrests are an accurate reflection of criminal involvement.

D. Self-Reported Criminal Activity

Tables VIII.2 and VIII.4 present reported arrests for treatment modalities and for three categories of criminal justice system involvement. Table VIII.5 presents treatment modalities and criminal justice involvement on a different measure: Self-reported criminal activity. During interviews clients reported their criminal activity in 11 categories, but the data for criminal activity in table VIII.5 refer to seven kinds of offenses--those considered serious forms of violent and property crime.

The data in table VIII.5 are consistent with the patterns found earlier for arrests (tables VIII.2 and VIII.3). Almost 65 percent of the residential clients reported serious criminal activity in the year before treatment. Clients in the other treatment modalities show less activity but a substantial amount nonetheless (28 to 43 percent). The results of table VIII.5 are not directly comparable to the data in tables VIII.2 and VIII.3 because there are differences in offense categories. However, table VIII.5 suggests that the

Table VIII.4 Self-Reported Arrests for Various Offense Categories by Current Criminal Justice System Involvement: Ever Arrested, Arrested in Year Before Treatment and Arrested in Three Months Before Treatment

Offense Categories	TASC Client (n=480)			Non-TASC Criminal Justice Involvement (n=822)			No Criminal Justice Involvement (n=2159)			All Respondents (n=3461)**		
	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months	Ever	Last Year	Last 3 Months
Violent	35.9%	12.8%	4.1%	36.8%	10.8%	3.4%	22.3%	3.3%	1.3%	27.6%	6.4%	2.2%
Income Generating Property	79.6	53.2	20.7	80.0	38.6	17.7	47.8	9.8	2.8	59.9	22.7	8.8
Drug Related	64.4	32.4	15.1	61.9	20.4	9.3	44.7	6.8	2.3	51.5	13.6	5.7
Other Victimless	56.7	26.7	8.5	55.3	22.9	11.1	37.7	9.1	3.1	44.5	14.8	5.7
Miscellaneous	50.2	18.9	6.6	49.2	16.7	6.9	29.8	4.6	1.7	37.3	9.2	3.5
All Offenses*	97.7	87.4	48.3	98.5	71.9	41.9	72.5	26.9	10.2	82.2	46.5	23.0

*"All offenses" is not the total of the offense categories because of multiple responses.

**Respondents classified as TASC who were not assigned to a program at Intake, excluded from previous tables, are included in this and other tables dealing with TASC.

extent of criminal activity by TOPS clients is much greater than is indicated by reports of arrests.

Table VIII.5 also confirms that (1) criminal justice involved clients are more active in serious criminal activity than clients not so involved and, (2) TASC clients report heavy recent involvement in criminal activity. Almost two-thirds (65 percent) of TASC clients reported they committed at least one serious criminal act in the year preceding treatment.

Table VIII.5 Self-Report of Commission of At Least One Serious Offense* in the Year Preceding Treatment by Modality/Environment and Criminal Justice System Involvement

Modality/Environment	Percent Reporting Serious Offenses	Sample Size
Outpatient Detoxification	42.6	451
Outpatient Methadone	27.8	827
Outpatient Drug Free	38.1	777
Residential	64.6	709
All Modalities/Environments	42.6	2764**
Criminal Justice Involvement		
TASC	65.3	426
Non-TASC Criminal Justice	56.3	698
No Criminal Justice Involvement	34.8	1820
All Categories	44.3	2944

*Serious offenses are defined as aggravated assault, robbery, burglary, theft-larceny, auto theft, forgery/embezzlement and stolen property/fencing.

**All data are from a part of the form the clients complete without supervision. The percentage of missing data, therefore, is large, ranging up to 15 percent.

The previous tables attempted to summarize the information on the individual categories of criminal activities and arrests. Table VIII.6 presents data on each type of activity and arrest. As shown, clients were fairly heavily involved in illegal activity in the year prior to treatment and had been

arrested for a variety of offenses. The reports of involvement in illegal activity exceed the arrest reports for all types of offenses by two to five times. For example, more than twice as many clients report involvement in theft as report arrests for the same offense. These results suggest that the self reported measure of illegal activity may be a more appropriate indicator of criminal involvement than arrest data.

Table VIII.6 Selected Types of Illegal Activities and Arrests in the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Illegal Activity					
None	34.5%	56.3%	34.8%	18.1%	48.1%
Sale of Illegal Drugs	21.1	9.3	22.7	28.1	19.4
Pimping, Prostitution	4.4	2.7	3.9	10.5	5.3
Gambling	16.9	7.5	7.0	14.1	10.5
Stolen Property	17.1	6.2	8.5	21.9	12.5
Forgery, Embezzlement	6.5	5.7	5.7	14.8	8.1
Auto Theft	2.1	1.5	3.6	8.1	3.8
Theft/Larceny	19.5	10.8	18.1	31.7	19.4
Burglary	10.3	4.7	10.2	21.7	11.4
Robbery	7.9	3.7	5.3	13.9	7.4
	----------MULTIPLE RESPONSE----------				
Arrests					
None	66.8%	72.7%	61.3%	35.4%	59.2%
Sale of Narcotics	4.7	5.2	8.2	12.2	7.7
Pimping, Prostitution	0.0	1.4	0.8	2.9	1.4
Gambling	1.8	1.4	0.1	0.6	0.9
Stolen Property	3.0	1.4	1.5	6.6	3.0
Forgery, Embezzlement	1.4	3.6	3.6	8.9	4.6
Auto Theft	0.4	1.3	1.3	4.7	2.1
Theft/Larceny	5.5	5.3	4.7	15.6	7.9
Burglary	2.6	2.5	5.2	17.0	6.9
Robbery	1.4	1.8	3.0	6.0	3.1
	----------MULTIPLE RESPONSE----------				

IX. EMPLOYMENT AND INCOME

Employment and income have often been used as outcome measures to assess the impact of drug treatment programs. The assumption underlying this is that effective treatment makes clients more employable and encourages them to obtain jobs. Increases in legitimate income, amount of work, and labor-force participation, then, are logical expectations. Indeed, a number of studies offer support for this hypothesis (e.g., see Hubbard et al., 1977), although it is not clear whether these effects of treatment would still appear strong when pretreatment employment is statistically controlled.

To fully assess the impacts of treatment, it is critical to establish the levels of employment and income prior to treatment. The TOPS intake interview includes a number of items assessing income and employment behavior prior to treatment as well as some aspects of clients' employment histories. The relevant data are considered briefly in this chapter.

A. Employment

Two indices of recent employment are shown in table IX.1: labor-force status in the week prior to treatment program admission and weeks of full-time work (35 or more hours) in the year prior to treatment. In a review of labor force participation measures in drug treatment studies conducted since 1970 (Hubbard et al., 1977), employment rates were found to range between 18 and 40 percent in methadone programs and between 16 and 23 percent in residential programs. The TOPS data show a similar but somewhat lower level of employment for methadone (34 percent) and residential (12 percent) program clients. These differences could be related to general unemployment patterns. The employment rates reported for CODAP and TOPS are similar, but TOPS reports more unemployed clients seeking work and fewer clients employed full-time (see table IX.2).

The second index of recent employment is the number of weeks in the past year in which a client worked 35 or more hours. Other treatment studies (Burt Associates, 1977; Demaree and Neman, 1976; Lukoff, 1974; Mandell et al., 1973; Simpson and Savage, 1978) generally used days worked as a measure. The difficulties in interpreting such data on employment were discussed by Hubbard et al. (1977). None of the measures of employment in any treatment study currently available provides data comparable to the weeks of work measure

Table IX. 1 Labor Force Status at Admission, Weeks of Full-Time Work in the Year Preceding Treatment, Duration at Longest Full-Time Job and Months Since Last Full-Time Job by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Labor Force Status					
Employed	21.3%	33.7%	34.2%	11.8%	26.4%
Looking for Work	6.1	10.0	18.0	4.4	10.1
Out of the Labor Force	72.6	56.3	47.8	83.8	63.5
(In School or Training)	(1.4)	(1.7)	(12.4)	(2.2)	(4.6)
(In Institution)	(1.0)	(2.0)	(5.5)	(44.8)	(13.7)
(Disabled,Retired)	(0.8)	(5.8)	(3.2)	(1.8)	(3.3)
(Keeping House)	(4.9)	(16.8)	(10.9)	(4.7)	(10.3)
(Other)	(64.5)	(30.0)	(15.8)	(30.3)	(31.6)
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=512)	(n=1080)	(n=885)	(n=847)	(n=3324)
Weeks of Full-Time (35+ Hours) Work					
None	48.3%	43.4%	32.0%	41.2%	40.6%
1 - 13	10.2	9.9	19.7	19.2	14.9
14 - 39	18.0	19.4	25.3	27.4	22.8
40 - 51	9.4	8.0	12.9	8.1	9.5
52	14.1	19.3	10.1	4.1	12.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=510)	(n=1097)	(n=873)	(n=850)	(n=3330)
Duration of Longest Full-Time Job					
No Full-Time Job	6.8%	8.0%	10.1%	6.4%	8.0%
One Year or Less	28.2	31.9	37.8	47.0	36.8
One to Three Years	34.4	34.1	32.7	28.6	32.4
More than Three Years	30.6	26.0	19.4	18.0	22.8
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=518)	(n=1072)	(n=871)	(n=851)	(n=3312)
Months Since Last Full-Time Job					
One Month or Less	32.2%	38.3%	40.8%	21.2%	33.5%
Two to Twelve Months	27.3	24.7	31.0	40.0	30.9
13 - 36 Months	15.1	12.0	8.5	16.6	12.7
More than 36 Months	17.3	16.2	9.3	15.6	14.4
Never had a Full-Time Job	8.1	8.8	10.4	6.6	8.5
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=444)	(n=968)	(n=835)	(n=835)	(n=3082)

used in TOPS. Such data would be useful because of their comparability with other employment studies.

In table IX.1 this full-time work index shows that about one in ten clients was fully employed in the year prior to treatment. Another ten percent worked full-time for at least 40 weeks. Full-time employment of whatever duration in the preceding year was most common in outpatient drug free programs and least common in detoxification programs.

Employment history may be predictive of present or future employment. TOPS also included measures of the duration of a client's longest job and the months since a client's last full-time job (table IX.1). About 23 percent of the clients had held a job for more than three years and over half had held at least one full-time job for at least a year. These results suggest that some clients have had long and/or recent experience in the labor force. This experience should assist them in obtaining employment during and after treatment.

Table IX.2 Employment Status at Admission of 1979 CODAP Clients and TOPS Respondents

	CODAP	TOPS
Employment Status		
Unemployed, not seeking work*	54%	53%
Unemployed, seeking work	15	19
Employed part-time	6	9
Employed full-time	25	19
TOTAL	100%	100%
	(n = 234,629)	(n = 3324)

*Definition of "seeking work" is looking for work in preceding 30 days. TOPS definition is "looking for work" most of the week preceding program contact.

B. Income

Table IX.3 presents data on income sources and total income for the year prior to treatment. Previous studies (Sells, 1974; Mandell et al., 1973; Burt Associates, 1974) found that illegal activity was the primary source of income for between 36 and 59 percent of clients. Jobs were reported as a primary source by 14 to 23 percent of clients. In TOPS, however, 43 percent of all clients reported the highest amount of income from jobs. Twenty-seven percent reported the highest income from illegal activity. This difference between TOPS and other studies may be explained in part by TOPS' detailed questions on sources and amount of income. We found that many clients (46 percent) did report illegal income although the amounts reported were often less than the income for jobs.

Overall income is shown in the third section of table IX.3. Detoxification clients reported higher incomes than clients in other modalities/environments. In contrast to the 16 percent of clients reporting personal incomes of over $20,000, over half the clients in TOPS report incomes under $7,000, the 1979 federal poverty income guideline for a family of four.

Table IX.3 Sources of Income, Primary Source of Income and Total Personal Income in the Year Preceding Treatment by Modality/Environment

	Outpatient Detoxification (n=522)	Outpatient Methadone (n=1112)	Outpatient Drug Free (n=890)	Residential (n=865)	All Respondents (n=3389)
Sources of Income					
Job	49.9%	56.3%	76.9%	59.3%	61.6%
SSI	3.2	3.6	2.9	2.4	3.0
Welfare or Public Assistance	28.1	27.0	22.4	17.3	23.4
Social Security	2.0	2.4	2.9	1.9	2.3
Unemployment	6.2	6.6	8.7	8.5	7.6
Family/Friends	13.3	21.9	37.3	32.8	27.5
Illegal	73.6	32.5	34.7	56.5	45.9
	----------MULTIPLE RESPONSE----------				
Primary Source of Income					
Job	28.1%	42.8%	57.5%	36.4%	42.8%
SSI	0.6	2.3	1.0	1.1	1.4
Welfare or Public Assistance	4.4	15.6	8.9	6.7	9.8
Social Security	1.4	1.5	1.6	0.7	1.3
Unemployment	0.6	1.4	2.0	1.6	1.5
Family/Friends	3.4	5.9	8.7	6.3	6.3
Illegal	58.4	17.5	13.4	35.7	27.4
Other	3.1	13.0	6.9	11.5	9.5
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=505)	(n=1041)	(n=865)	(n=836)	(n=3247)
Personal Income					
$0 - 1,999	6.7%	25.6%	29.3%	26.6%	24.6%
2,000 - 6,999	14.1	28.9	33.9	31.5	28.6
7,000 - 9,999	6.7	13.2	14.5	10.4	11.8
10,000 - 19,999	27.3	18.4	16.3	16.7	18.8
20,000 or more	45.2	13.9	6.0	14.8	16.2
	100.0%	100.0%	100.0%	100.0%	100.0%
	(n=505)	(n=1041)	(n=865)	(n=836)	(n=3247)

X. TREATMENT PROGRAM SERVICES AND CLIENT SATISFACTION

The previous several chapters have presented a descriptive overview of the 1979 TOPS admission cohort with attention to treatment outcome measures. Clients also provided informative data on the overall services provided by treatment programs and their satisfaction with these services. More specifically clients indicated (a) various types of problems they were experiencing because of their drug use (e.g., medical, psychological); (b) their perceptions of needs for services for these problems; (c) the kinds of services they received while in treatment; and (d) their level of satisfaction with these services. The present chapter considers some of these data.

A. Drug Related Problems and Service Needs During Treatment

Table X.1 reports data on drug related problems experienced by TOPS clients during the time they were in treatment. Problems surveyed included medical, psychological, family, legal, job/education, and financial along with a no problem category. Since it was possible for respondents to indicate problems of more than one type, the tabled values do not total 100 percent. The pattern and trends in reports of various drug-related problems appear to differ somewhat across modalities although some problems seem common to all modalities. For example, in residential programs medical and psychological problems are the most predominant at one month; in outpatient drug free programs psychological and family problems are reported most frequently. In methadone programs family and financial problems appear most salient at one month.

Inspection of table X.1 is rather encouraging in that it shows a clear pattern of reduction of problems over time. In all modalities notably fewer problems were reported between the one month and the twelve month interviews. Consistent with this pattern is an increase over time in the number of clients who reported no drug related problems (69 percent to 85 percent). Within modalities this same general pattern prevails. Although the data in table X.1 look encouraging, there is a potential problem of misinterpretation because nonequivalent samples are being compared and artificial differences in characteristics and behaviors may be shown. This problem would be eliminated were the same sample compared over time. As discussed more completely in chapter XI, examining data at every point in time for the subset of the sample that received services during that time frame would solve some of these problems.

Table X.1 Drug Related Problems During Treatment Periods by Modality/Environment

Problem by Period	Outpatient Methadone	Outpatient Drug-Free	Residential	All Respondents
0-1 Month				
Medical	8.8%	11.5%	10.0%	9.8%
Psychological	11.5	21.7	17.8	15.9
Family	14.3	15.8	8.9	13.1
Legal	2.3	3.0	3.3	2.8
Job/Education	6.8	6.7	2.6	5.5
Financial	14.8	11.9	2.6	10.5
No Problems	67.1	66.4	73.0	68.7
	----------MULTIPLE RESPONSE----------			
	(n=855)	(n=464)	(n=548)	(n=1867)
0-3 Month				
Medical	9.6%	12.0%	10.5%	10.4%
Psychological	11.0	20.5	9.9	12.7
Family	14.0	18.3	6.6	13.0
Legal	2.8	4.5	2.1	3.0
Job/Education	5.5	8.2	1.5	5.0
Financial	10.3	11.9	3.0	8.7
No Problems	72.1	68.4	80.5	73.5
	----------MULTIPLE RESPONSE----------			
	(n=681)	(n=269)	(n=338)	(n=1288)
3-6 Month				
Medical	9.2%	9.6%	4.4%	8.1%
Psychological	7.2	19.1	8.2	9.2
Family	12.6	14.8	6.0	11.4
Legal	2.8	1.7	1.1	2.3
Job/Education	4.6	8.7	2.7	4.8
Financial	10.8	13.9	2.7	9.4
No Problems	76.1	69.0	86.9	77.5
	----------MULTIPLE RESPONSE----------			
	(n=510)	(n=116)	(n=183)	(n=809)
6-9 Month				
Medical	5.3%	3.2%	3.0%	4.7%
Psychological	6.1	8.1	9.0	6.9
Family	7.7	9.7	6.1	7.7
Legal	1.1	1.6	2.0	1.3
Job/Education	2.4	3.2	2.0	2.4
Financial	8.8	4.8	2.0	7.1
No Problems	83.2	87.3	88.0	84.5
	----------MULTIPLE RESPONSE----------			
	(n=380)	(n=63)	(n=100)	(n=543)
9-12 Month				
Medical	4.5%	5.3%	2.4%	4.3%
Psychological	6.7	5.3	2.4	6.1
Family	7.5	5.3	0.0	6.3
Legal	1.1	0.0	0.0	0.9
Job/Education	3.4	0.0	0.0	2.6
Financial	10.5	2.6	0.0	8.4
No Problems	83.3	86.8	97.6	85.4
	----------MULTIPLE RESPONSE----------			
	(n=270)	(n=38)	(n=42)	(n=350)

Note: Actual n's may vary slightly from those listed due to missing data.

Shown in more detail in table X.2 are those in the no problem category in table X.1. Data can be compared at the time of each interview both for the total sample (reading down the main diagonal of the table) and for the subset of clients in treatment for a given period (reading across the appropriate row of the table.) The same general pattern seems to prevail in these data as was noted in table X.1. Roughly a fourth of the clients reported no problems during the year before treatment. These figures show dramatic improvement in the numbers of clients reporting no problems during the first three months of treatment. A steady continued reduction of problems occurs such that by nine months few drug related problems remain. Thus, for the data in table X.1, non-equivalent samples did not appear to seriously distort the data.

Table X.3 indicates the self-reported service needs of clients during treatment periods. Clients report a rather high need for services in nearly all problem areas surveyed both early and late in treatment. Although there are modest reductions in service needs in some areas, about one third of clients still report needs in most areas even after twelve months of treatment. A close examination of table X.3 shows a number of variations within modalities regarding particular needs.

It is interesting to note that while many clients report a need for a variety of services, they apparently do not regard all of these problems as being drug related. The need for other services is indicated by the high discrepancy between the number of clients who feel a need for legal, educational, employment and financial services (table X.3) and the number who indicate that such problems stem from drug use (table X.1).

B. Satisfaction with Treatment and Services Received

One index of the effectiveness of drug treatment programs is client perceptions of the kinds of treatment and services received and their satisfaction with those services.

Clients' satisfaction with treatment received for their drug use was examined as a function of the length of time they remained in treatment. For all modalities combined, it appears that the large majority of clients was either somewhat satisfied or very satisfied with the treatment received in the program. Roughly 95 percent of clients responded in one of these categories. These high levels of satisfaction were apparent initially and remained such throughout treatment. Table X.4 presents data on clients who report being

Table X.2 Clients Reporting No Drug Related Problems Before and During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	Year Before Treatment	Intake-Three Months	Three-Six Months	Six-Nine Months	Nine-Twelve Months
Outpatient Methadone					
Intake (n=1098)	24.1%	-	-	-	-
3 Months (n=673)	21.7	73.1%	-	-	-
6 Months (n=509)	19.1	72.1	77.6%	-	-
9 Months (n=374)	19.0	72.6	76.4	84.3%	-
12 Months (n=267)	18.4	72.4	77.1	84.6	84.6%
Residential					
Intake (n=857)	18.6%	-	-	-	-
3 Months (n=338)	17.5	81.7%	-	-	-
6 Months (n=183)	15.9	80.1	87.4%	-	-
9 Months (n=99)	16.2	81.4	84.2	88.9%	-
12 Months (n=42)	19.1	85.4	82.5	85.7	97.6%
Outpatient Drug Free					
Intake (n=888)	22.1%	-	-	-	-
3 Months (n=269)	25.3	68.7%	-	-	-
6 Months (n=116)	25.0	68.0	69.6%	-	-
9 Months (n=62)	22.6	67.3	72.7	88.7%	-
12 Months (n=38)	21.1	65.6	70.6	94.1	86.8%

Note: Data in the present table are based on clients for whom there were complete sets of records over time. Consequently, the values differ slightly from those reported in table X.1.

Table X.3 Self-Reported Service Needs During Treatment Periods by Modality/Environment

Needs by Period	Outpatient Methadone	Outpatient Drug Free	Residential	All Respondents
0-1 Month				
Medical	57.7%	31.4%	75.0%	55.6%
Psychological	40.3	64.7	66.6	55.6
Family	31.4	46.3	62.1	44.7
Legal	18.9	12.8	34.8	21.5
Education	32.9	37.9	68.9	44.8
Employment	38.9	34.7	49.5	40.6
Financial	35.0	33.7	57.9	41.0
	MULTIPLE RESPONSE			
	(n=685)	(n=433)	(n=464)	(n=1582)
0-3 Month				
Medical	45.5%	26.5%	72.0%	48.0%
Psychological	39.3	65.8	60.0	50.3
Family	31.5	49.4	62.6	43.2
Legal	18.0	11.4	31.5	19.7
Education	32.3	34.5	65.9	41.0
Employment	37.5	32.5	47.0	38.6
Financial	35.7	26.8	48.0	36.5
	MULTIPLE RESPONSE			
	(n=634)	(n=265)	(n=300)	(n=1199)
3-6 Month				
Medical	39.2%	27.2%	69.4%	44.1%
Psychological	35.6	75.9	49.2	44.6
Family	28.3	57.4	57.9	39.2
Legal	22.0	15.8	26.0	22.0
Education	32.8	29.6	66.3	39.6
Employment	35.5	35.1	46.1	37.8
Financial	38.7	29.6	46.6	39.2
	MULTIPLE RESPONSE			
	(n=502)	(n=116)	(n=180)	(n=798)
6-9 Month				
Medical	37.8%	22.6%	48.9%	38.0%
Psychological	29.3	71.4	47.4	37.6
Family	23.9	49.2	50.0	31.6
Legal	17.3	14.3	18.1	17.1
Education	34.8	22.6	56.2	36.9
Employment	33.5	33.3	45.8	35.7
Financial	39.2	25.4	35.7	36.9
	MULTIPLE RESPONSE			
	(n=377)	(n=63)	(n=98)	(n=538)
9-12 Month				
Medical	42.3%	23.7%	56.4%	41.8%
Psychological	30.7	71.1	45.2	37.1
Family	26.6	47.4	29.3	29.6
Legal	19.1	5.4	14.6	17.0
Education	33.2	36.8	64.9	37.2
Employment	35.8	34.2	43.9	36.6
Financial	39.8	23.7	34.2	37.2
	MULTIPLE RESPONSE			
	(n=257)	(n=38)	(n=42)	(n=337)

Note: Actual n's may vary slightly in some cases from those listed due to missing data.

Table X.4 Clients Reporting High Satisfaction With Drug Treatment Received by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	0-1 Month	0-3 Months	3-6 Months	6-9 Months	9-12 Months
Outpatient Methadone					
1 Month (n=849)	42.2%	-	-	-	-
3 Months (n=638)	44.0	45.1%	-	-	-
6 Months (n=483)	46.2	47.5	45.4%	-	-
9 Months (n=359)	49.0	50.9	47.6	48.3%	-
12 Months (n=257)	49.4	51.8	49.2	48.0	45.5%
Residential					
1 Month (n=543)	46.0%	-	-	-	-
3 Months (n=327)	51.4	55.2%	-	-	-
6 Months (n=177)	50.9	55.9	68.3%	-	-
9 Months (n=96)	52.1	56.1	67.7	69.0%	-
12 Months (n=42)	52.4	58.5	67.5	69.1	81.0%
Outpatient Drug Free					
1 Month (n=442)	42.3%	-	-	-	-
3 Months (n=228)	43.0	46.5%	-	-	-
6 Months (n=100)	46.0	42.3	57.0%	-	-
9 Months (n=58)	53.5	38.2	60.4	58.7%	-
12 Months (n=30)	60.0	41.4	69.0	67.7	61.8%

"very satisfied" with their treatment for drug problems. Within modalities, residential clients expressed the greatest degree of satisfaction. By the six month interview, two thirds of these clients reported they were very satisfied. Data for residential clients shows a marked increase in very satisfied clients as the length of treatment increases (from 52 percent to 81 percent). The percentages of outpatient drug free clients and outpatient methadone clients who are very satisfied over time do not show substantial changes.

As noted earlier, clients reported having a variety of problems besides use of drugs (e.g., medical, psychological, employment). During the interviews they were asked to indicate in a global way (i.e., without identifying any specifics) whether the treatment program had helped them with problems other than drug abuse. Clients indicated whether they had been helped very much, somewhat or not at all. Combining responses from those who were helped very much or somewhat reveals positive evaluation of programs overall (79 percent reported they had been helped somewhat or very much at one month as did 71 percent at 12 months) but showed differences among modalities. Residential clients reported receiving the most help (87 to 97 percent from 1 to 12 months) and methadone clients reported the least help (69 to 63 percent from 1 to 12 months). Table X.5 presents data on clients who reported that they had been helped very much during the time they were in treatment. Across modalities, slightly over one-third of the clients thought they had been helped very much during each time period. As suggested above, clear differences appeared across modalities. These percentages ranged from 47 percent to 74 percent for residential programs and from 38 percent to 54 percent for outpatient drug free programs. Outpatient methadone programs were considerably lower, ranging from 24 percent to 35 percent. In fact, roughly one-third of methadone clients reported they had not been helped at all with their other problems.

Table X.6 examines those clients that received specific treatment for alcohol and/or mental health or emotional problems. As shown, the number of clients involved in such treatment varied considerably across modalities. At any time frame during drug treatment, outpatient methadone clients showed the least involvement with either of these other treatments. Involvement in alcohol treatment never exceeded 2 percent and mental health services never

Table X.5 Clients Reporting They Were Very Much Helped With Problems Other Than Drug Abuse During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	0-1 Month	0-3 Months	3-6 Months	6-9 Months	9-12 Months
Outpatient Methadone					
1 Month (n=850)	29.1%	-	-	-	-
3 Months (n=639)	29.6	28.4%	-	-	-
6 Months (n=483)	30.6	28.2	24.3%	-	-
9 Months (n=361)	33.2	30.1	25.0	28.7%	-
12 Months (n=258)	34.9	32.4	27.0	28.0	25.3%
Residential					
1 Month (n=546)	46.5%	-	-	-	-
3 Months (n=330)	45.2	54.8%	-	-	-
6 Months (n=178)	47.2	55.9	60.7%	-	-
9 Months (n=96)	50.0	56.2	64.6	66.0%	-
12 Months (n=42)	59.5	58.4	65.0	69.1	73.8%
Outpatient Drug Free					
1 Month (n=456)	39.0%	-	-	-	-
3 Months (n=234)	38.0	42.5%	-	-	-
6 Months (n=104)	46.2	44.0	51.8%	-	-
9 Months (n=60)	43.3	39.3	53.6	44.4%	-
12 Months (n=37)	46.0	34.4	60.0	38.2	50.0%

exceeded 5 percent. This contrasts sharply with clients in the outpatient drug free modality where as many as 12 percent received alcohol treatment and up to 39 percent received mental health treatment. The residential modality showed the greatest number of clients receiving alcohol treatment (up to 30 percent) but fell between the other modalities in the number receiving mental health services (up to 19 percent).

Table X.6 Alcohol and Mental Health Treatment Received During Treatment Periods by Modality/Environment

Treatment by Period	Outpatient Methadone	Outpatient Drug Free	Residential	All Respondents
0-1 Month				
Alcohol	0.6%	10.4%	12.2%	6.4%
Mental Health	1.4	21.0	13.1	9.7
	----------MULTIPLE RESPONSE----------			
	(n=849)	(n=462)	(n=543)	(n=1854)
0-3 Month				
Alcohol	0.7%	11.6%	27.8%	10.0%
Mental Health	3.9	27.7	16.5	12.1
	----------MULTIPLE RESPONSE----------			
	(n=680)	(n=268)	(n=334)	(n=1282)
3-6 Month				
Alcohol	2.0%	7.8%	29.5%	9.0%
Mental Health	4.5	38.8	18.8	12.7
	----------MULTIPLE RESPONSE----------			
	(n=508)	(n=116)	(n=183)	(n=807)
6-9 Month				
Alcohol	0.8%	4.8%	23.0%	5.3%
Mental Health	3.4	34.9	18.0	9.6
	----------MULTIPLE RESPONSE----------			
	(n=379)	(n=63)	(n=100)	(n=542)
9-12 Month				
Alcohol	1.1%	0.0%	14.3%	2.6%
Mental Health	3.7	34.2	14.3	8.2
	----------MULTIPLE RESPONSE----------			
	(n=269)	(n=38)	(n=42)	(n=349)

Note: Actual n's may vary slightly from those listed due to missing data.

Finally, table X.7 reports the proportion of clients who received medical, psychological, family, legal, educational, employment, or financial services. Inspection of this table shows that medical, psychological, and family related services were those most often received. The table also indicates considerable variability among the modalities in type of services received and the proportion of clients receiving them. The outpatient drug free modality had the most clients receiving psychologial services whereas the residential modality had the most clients receiving medical services.

A comparison of some interest is between the data of table X.7 for services received and the data on table X.3 for services perceived as needed in these same basic areas. As is clear from comparing the two tables, there are rather large discrepancies. With only a very few exceptions (e.g., psychological needs of outpatient drug free clients at 9- and 12-month interviews; family and legal needs of drug free clients at the 12-month interview), the perceived needs of clients exceed the services received, often by considerable margins. Assuming that this finding holds up after further probing during the interviews with clients and their counselors, it will have important implications for program planning and referral methods. Certainly, this aspect of treatment process bears much closer examination.

Table X.7 Types of Services Received During Treatment Periods by Modality/Environment

Service by Period	Outpatient Methadone	Outpatient Drug-Free	Residential	All Respondents
0-1 Month				
Medical	47.6%	26.2%	69.0%	48.4%
Psychological	24.0	55.1	47.5	38.8
Family	12.9	35.0	35.0	24.9
Legal	2.3	4.1	17.7	7.1
Education	5.3	16.5	31.8	15.6
Employment	7.2	12.6	12.7	10.1
Financial	5.7	12.1	16.9	10.4
	-----	----MULTIPLE RESPONSE----	-----	-----
	(n=807)	(n=443)	(n=507)	(n=1757)
0-3 Month				
Medical	45.9%	23.1%	72.9%	47.7%
Psychological	27.9	60.6	55.1	41.9
Family	12.1	42.5	44.6	26.9
Legal	2.1	5.0	18.3	6.6
Education	8.0	23.9	52.7	22.8
Employment	9.4	10.3	16.3	11.2
Financial	6.5	11.7	15.8	9.6
	-----	----MULTIPLE RESPONSE----	-----	-----
	(n=628)	(n=264)	(n=294)	(n=1186)
3-6 Month				
Medical	30.0%	20.9%	66.9%	37.0%
Psychological	23.6	74.1	42.6	35.3
Family	8.3	51.3	46.0	22.9
Legal	1.2	9.7	14.1	5.3
Education	5.7	20.0	51.7	18.1
Employment	5.5	16.5	22.9	10.9
Financial	6.6	15.7	21.0	11.0
	-----	----MULTIPLE RESPONSE----	-----	-----
	(n=498)	(n=116)	(n=178)	(n=792)
6-9 Month				
Medical	27.0%	12.9%	44.8%	28.6%
Psychological	19.7	76.2	46.2	31.1
Family	8.0	49.2	40.2	18.4
Legal	2.4	4.8	14.0	4.7
Education	5.9	16.4	43.0	13.7
Employment	5.4	14.3	22.9	9.6
Financial	5.9	12.9	14.7	8.3
	-----	----MULTIPLE RESPONSE----	-----	-----
	(n=375)	(n=63)	(n=96)	(n=534)
9-12 Month				
Medical	28.3%	15.8%	57.1%	30.5%
Psychological	13.2	71.1	45.2	23.7
Family	8.6	47.4	26.8	15.2
Legal	2.0	5.6	12.2	3.6
Education	7.4	26.3	50.0	14.8
Employment	7.9	18.4	26.2	11.4
Financial	5.9	7.9	11.9	6.9
	-----	----MULTIPLE RESPONSE----	-----	-----
	(n=258)	(n=38)	(n=42)	(n=338)

Note: Actual n's may vary slightly from those listed due to missing data.

XI. BEHAVIOR DURING TREATMENT

This chapter provides a basic description of the treatment outcomes for the TOPS clients. Basic information is presented on retention in treatment and on changes in behavior during treatment in five areas: alcohol use, drug use, depression, illegal activity, and employment. The data are based on information from the intake interview and from the one-, three-, six-, nine- and twelve-month intreatment interviews.

A. Retention

In the Intreatment Study, retention or time in treatment is defined as the time between the CODAP admission and the date of last physical contact for treatment. A discussion of retention in treatment is salient to all the modalities except outpatient detoxification which by nature is short-term. Nonetheless, for completeness, these data are included, although not discussed.

Table XI.1 presents the retention rates for the four modalities/environments along with similar data for CODAP clients. For TOPS clients, retention is the highest for the outpatient methadone programs. Half of these clients stay six months or more and only 14 percent drop out within the first month of treatment. Comparison of the retention rates for TOPS and CODAP outpatient methadone programs shows TOPS clients are more likely to stay in treatment.

The TOPS residential programs lose 32 percent of their clients in the first month and retain 22 percent of their clients for more than six months. Compared to CODAP, the TOPS data again reflect higher long term retention rates.

Table XI.1 shows a higher proportion of clients dropping out during the first month in outpatient drug free treatment than in methadone or residential modalities. Thirty-seven percent leave within the first month and only 17 percent remain for six months or more. In contrast, CODAP reports more clients staying at least a month and about the same staying from six to twelve months. This discrepancy appears to be due to the high dropout rate within the first day in TOPS programs and the method of dating discharges in the CODAP system.

Demographic and behavioral characteristics that might predict dropout during the first month in treatment were examined. These data (table XI.2) are based on the intake interviews and show differences in the dropout rates by sex-age, legal status, depression indicators, and primary drug problem.

Table XI.1. Length of Time in Treatment by Intake Modality/Environment for 1979 TOPS and CODAP Clients

Time in Treatment	Outpatient Detoxification* (n=522)		Outpatient Methadone (n=1112)		Outpatient Drug Free (n=890)		Residential (n=865)		Total (n=3389)	
TOPS										
Contact only**		13.0%		6.6%		16.6%		4.8%		9.8%
1 Week or Less	96.3%	42.5	14.4%	2.8	36.8%	8.1	31.7%	6.9	37.3%	11.3
2-4 Weeks		40.8		5.0		12.1		20.0		16.2
5-13 Weeks	1.7	1.1	34.6	15.5	45.9	26.2	46.4	26.4	35.5	18.9
14-26 Weeks		0.6		19.1		19.7		20.0		16.6
27-39 Weeks	2.0	1.0	51.0	12.7	17.3	7.4	21.9	9.2	27.2	8.6
40 Weeks or More		1.0		38.3		9.9		12.7		18.6
		100.0% (n=522)		100.0% (n=1107)		100.0% (n=884)		100.0% (n=859)		100.0% (n=3372)
CODAP										
1-4 Weeks	81.5%		18.9%		22.7%		49.0%		38.7%	
5-26 Weeks	16.0		53.5		59.9		40.2		47.0	
27 Weeks or More	2.5		27.6		17.4		10.8		14.3	
	100.0% (n=33,985)		100.0% (n=17,337)		100.0% (n=89,209)		100.0% (n=31,013)		100.0% (n=171,544)	

NOTE: Bracketed categories provide a direct comparison with CODAP data.

**Clients who agreed to participate in TOPS and completed the Intake interview, but did not return for treatment.

Table XI.2 Percentages of Clients in Various Subgroups Who Drop Out of Treatment During the First Month by Modality/Environment

	Outpatient Methadone (n = 1112)	Outpatient Drug Free (n = 890)	Residential (n = 865)	Total (n = 2867)
Dropout Rates by Subgroups				
Sex/Age				
Male under 21	20.0%	35.2%	35.3%	34.3%
Male 21-30	13.7	37.9	32.0	26.3
Male over 30	13.2	39.3	24.1	20.7
Female under 21	*	27.5	42.9	31.6
Female 21-30	15.2	41.9	32.4	27.4
Female over 30	17.9	31.1	34.8	26.8
Legal Status at Admission				
Probation	13.8%	30.9%	21.2%	24.1%
Parole	20.0	27.6	34.2	25.9
Awaiting Trial	10.5	34.8	36.6	32.2
Awaiting Sentencing	*	*	16.7	19.0
Serving Sentence	*	*	23.5	23.7
No Legal Status	14.3	40.4	39.5	26.8
Depression Indicators				
Could Not Get Out of Bed	13.0%	32.6%	29.0%	21.6%
Thought About Suicide	16.5	33.4	30.4	28.0
Attempted Suicide	19.4	39.5	44.2	37.5
Primary Problem Drug				
Alcohol	*	42.4%	32.1%	36.5%
Marihuana	*	26.7	39.5	30.6
Hallucinogens	*	37.5	53.2	47.9
Cocaine	*	47.1	35.6	41.2
Heroin	12.7	46.6	26.3	18.8
Narcotics/Methadone	15.6	38.8	36.0	24.4
Tranquilizers	*	24.2	28.0	11.9
Barbs/Sed/Hypnotics	*	21.4	27.6	26.6
Amphetamines	*	48.0	25.0	36.0
No Problem	14.6	36.5	24.4	29.0

* Fewer than 20 intake respondents fell into this subgroup.

Consistent with table XI.1, the data in table XI.2 show fewer dropouts within all of the main groupings in methadone programs than in drug free and residential programs. The sex/age breakdown shows higher proportions of early dropouts among males under 21 for methadone clients, among females under 21 for residential clients, and among females 21-30 for drug free clients. For the legal status variable, first month dropouts in methadone programs were greatest among clients on parole. In drug free and residential programs it was greatest for clients with no legal status and those awaiting trial. Dropouts categorized by depression indicators were greatest in all modalities for clients who had attempted suicide. The classification of dropouts by primary problem drug showed most dropouts in the first month among users of hallucinogens in residential programs and among users of amphetamines, heroin and cocaine in drug free programs.

B. Descriptive Analyses of Behavior Changes

The description of changes in behavior that occur during and after treatment is one of the most important objectives of the TOPS research. The remainder of this chapter presents data on five key behaviors: use of alcohol, use of primary drug, indicators of depression, illegal activity and employment. These behaviors are described for pretreatment periods and for three-month periods in the first year of treatment. In order to accurately compare behavior among the time periods, we have separated respondents into five nonexclusive retention groups: (a) clients who complete the intake interview; (b) clients who remain in treatment at least three months; (c) clients who remain in treatment at least six months; (d) clients who remain in treatment at least nine months; and (e) clients who remain in treatment at least 12 months. The time intervals spanned by the interviews are examined for each of these five retention groups.

The advantage of such a classification is twofold. First, it allows the data to be examined for all subjects during each time frame. This is the approach that has commonly been followed by other researchers, using nonequivalent samples across time frames. Though it provides an analysis with maximum power, it may present misleading results due to a potential confounding effect of client attrition. As treatment time increases, the number of clients remaining in treatment decreases. The characteristics and behaviors of these long term clients may be different from those of the larger shorter

term comparison groups. To examine for this possibility, comparisons need to be made for all time intervals using only the subset of clients who remain in treatment during those intervals.

The second advantage, then, of the present classification scheme is that it permits the examination of changes for the subset of clients who stay in treatment for any particular interval. Thus, the data presented in tables XI.3 to XI.7 are not confounded by problems of nonequivalent samples in each time frame. In these tables values along the diagonal indicate changes across time for the entire sample, whereas values across a given row indicate changes for the relevant subset of clients. Nonresponse to a particular interview or missing data for an item account for the small differences in the numbers of clients within modalities for the different behaviors across the time frames.

Detoxification programs are omitted from these analyses due to their short-term nature. Also note that the nature of the residential programs greatly affects the results for this modality/environment. The nature of residential programs restricts the opportunity for alcohol use, drug use, and illegal activity. Outside employment is usually only possible in the final stages of treatment. As a result, analyses of the type shown in tables XI.3 to XI.7 have limited utility in assessing behavioral changes in alcohol use, drug use, criminal behavior and employment for residential program clients. For comprehensiveness, we have included residential clients but caution the reader about the limitations of these data. The indication of depression, however, is one variable that can be meaningfully used in drug treatment analysis for residential programs.

1. Alcohol Use

In considering changes in alcohol use, it is important to keep in mind that these data indicate alcohol use of drug treatment clients, and not individuals necessarily diagnosed as needing treatment for alcohol abuse or alcoholism. Table XI.3 shows the percentage of clients who reported daily or greater use of alcohol in the five time periods. While some previous studies have suggested that alcohol is substituted for other drugs by methadone clients, the data in table XI.3 do not show major increases over time. In outpatient drug free programs, however, there is substantially greater daily use between intake and six months for clients remaining in the program. These patterns of alcohol use require careful examination in subsequent analyses of alcohol use patterns and correlates.

Table XI.3 Daily or Greater Use of Alcohol* Before and During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	Year Before Treatment	Intake-Three Months	Three-Six Months	Six-Nine Months	Nine-Twelve Months
Outpatient Methadone					
Intake (n=1109)	17.5%	-	-	-	-
3 Months (n=680)	16.3	18.6%	-	-	-
6 Months (n=509)	15.3	16.2	20.9%	-	-
9 Months (n=379)	16.1	14.3	19.4	19.5%	-
12 Months (n=266)	15.0	13.2	18.3	17.6	16.9%
Residential**					
Intake (n=864)	29.9%	-	-	-	-
3 Months (n=338)	25.7	0.6%	-	-	-
6 Months (n=183)	26.8	0.6	1.1%	-	-
9 Months (n=100)	25.0	1.0	2.1	0.0%	-
12 Months (n=42)	35.7	2.4	2.5	0.0	2.4%
Outpatient Drug Free					
Intake (n=881)	20.4%	-	-	-	-
3 Months (n=267)	14.6	14.1%	-	-	-
6 Months (n=114)	13.2	18.0	15.7%	-	-
9 Months (n=61)	14.8	25.5	21.8	17.7%	-
12 Months (n=38)	10.5	28.1	26.5	14.7	15.8%

*Includes any use of beer, wine, or liquor

**Data for residential programs are presented. However, the data may be confounded by changes in modality/environment after intake, the opportunity to get passes from a program and/or hesitancy to report use within a residence.

2. Drug Use

To assess changes in drug use, clients' reports of weekly or more frequent use of their primary drug were examined across time. Table XI.4 shows substantial reductions in the use of the primary drug across all modalities, the impact being greatest during the first three months of treatment. Methadone programs show the greatest change with clients' pretreatment levels of about 76 percent to 80 percent declining to 8 to 10 percent during treatment. Outpatient drug free programs also show substantial declines, although the reductions are not as large. Before treatment approximately 53 to 66 percent of clients used their primary drug weekly or more often. During the first three months of treatment, these figures were roughly halved to 27 to 30 percent. After three months the impact of treatment appeared to be largely that of maintaining those lower levels of drug use. These preliminary data, however, do not provide a look at the pattern of changes for individual clients; rather they indicate the use pattern for the group of clients within modalities. Additional analyses may reveal important individual variations over time that are not apparent here.

3. Depression

Table XI.5 shows that indicators of depression decline substantially for those clients who remain in treatment three months or more. The maximum benefits of treatment on reducing reports of depression appear to be realized by nine months. The largest decreases in reports of depression after intake and the lowest levels of such reports during treatment occurred in residential programs. After nine months only five percent of clients in these programs still reported some indication of depression compared to 60 percent at intake. Clients remaining in treatment for 12 months reported no depressive symptoms. One fourth of the clients in outpatient drug free programs and outpatient methadone programs continued to report at least one indicator of depression during their second six months of treatment. In future analyses, efforts will be directed toward determining, as precisely as possible, what aspects of treatment are closely related to or predictive of this improvement.

4. Illegal Activity

All treatment modalities show reductions during treatment in the percentage of clients involved in illegal activity and in the mean numbers of self reported illegal acts. The reductions shown in table XI.6 occurred largely during the first three months in treatment. In contrast to other

Table XI.4 Weekly or Greater Use of Primary Drug* Before and During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	Year Before Treatment	Intake-Three Months	Three-Six Months	Six-Nine Months	Nine-Twelve Months
Outpatient Methadone					
Intake (n=1104)	78.4%	-	-	-	-
3 Months (n=677)	78.8	8.6%	-	-	-
6 Months (n=509)	79.2	9.5	8.6%	-	-
9 Months (n=373)	78.0	10.2	8.2	8.0%	-
12 Months (n=264)	75.6	9.6	8.7	9.5	9.5%
Residential**					
Intake (n=823)	76.2%	-	-	-	-
3 Months (n=330)	77.2	2.4%	-	-	-
6 Months (n=181)	75.6	2.3	2.2%	-	-
9 Months (n=99)	68.4	1.0	3.2	1.0%	-
12 Months (n=42)	68.3	0.0	5.0	2.4	0.0%
Outpatient Drug Free					
Intake (n=849)	65.6%	-	-	-	-
3 Months (n=263	60.7	29.3%	-	-	-
6 Months (n=115)	57.9	30.3	27.0%	-	-
9 Months (n=62)	53.2	27.3	28.6	24.2%	-
12 Months (n=37)	59.5	28.1	29.4	18.2	21.6%

*Primary drug is that reported by the respondent as his/her most serious problem.

**Data for residential programs are presented. However, the data may be confounded by changes in modality/environment after intake, the opportunity to get passes from a program and/or hesitancy to report use within a residence.

Table XI.5 Indicators of Depression* Before and During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	Year Before Treatment	Intake-Three Months	Three-Six Months	Six-Nine Months	Nine-Twelve Months
Outpatient Methadone					
Intake (n=1102)	57.3%	-	-	-	-
3 Months (n=664)	56.6	29.7%	-	-	-
6 Months (n=507)	57.8	31.1	27.4%	-	-
9 Months (n=380)	56.5	29.3	27.0	22.9%	-
12 Months (n=259)	54.3	29.2	26.7	24.3	24.3%
Residential					
Intake (n=865)	62.0%	-	-	-	-
3 Months (n=324)	57.7	19.1%	-	-	-
6 Months (n=177)	54.1	19.9	19.2%	-	-
9 Months (n=99)	55.0	18.5	17.0	5.1%	-
12 Months (n=41)	66.7	18.0	17.5	0.0	0.0%
Outpatient Drug Free					
Intake (n=887)	63.3%	-	-	-	-
3 Months (n=265)	62.3	30.9%	-	-	-
6 Months (n=116)	63.5	35.4	33.6%	-	-
9 Months (n=63)	63.5	37.5	38.6	23.8%	-
12 Months (n=34)	68.4	43.8	48.6	26.5	26.5%

*Indicators of depression are defined as self-reports of (1) feeling so depressed that the respondent could not get out of bed in the morning and/or (2) having thoughts about committing suicide, and/or (3) attempting suicide.

Table XI.6 Percentage of Clients Committing Serious* (Nondrug Defined) Offenses and Mean** Number of Offenses Committed Before and During Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview									
	Three Months Before Treatment		Intake-Three Months		Three-Six Months		Six-Nine Months		Nine-Twelve Months	
Outpatient Methadone										
Intake (n=960)	20.3%	(2.9)†	-	-	-	-	-	-	-	-
3 Months (n=654)	21.0	(2.9)	12.2%	(1.2)	-	-	-	-	-	-
6 Months (n=498)	21.9	(3.1)	11.3	(1.2)	8.9%	(0.6)	-	-	-	-
9 Months (n=372)	22.1	(3.0)	12.9	(1.4)	9.5	(0.6)	7.1%	(0.9)	-	-
12 Months (n=257)	22.3	(3.3)	11.6	(1.3)	9.2	(0.7)	6.4	(0.7)	9.7%	(0.9)
Residential* **										
Intake (n=782)	44.2	(6.1)	-	-	-	-	-	-	-	-
3 Months (n=335)	44.4	(6.3)	2.4	(0.1)	-	-	-	-	-	-
6 Months (n=181)	39.2	(5.0)	0.6	(0.1)	2.2	(0.5)	-	-	-	-
9 Months (n=98)	31.7	(2.4)	1.0	(0.2)	4.2	(1.0)	2.1	(0.1)	-	-
12 Months (n=42)	24.3	(3.2)	2.4	(0.0)	7.5	(2.3)	4.8	(0.2)	7.2	(0.0)
Outpatient Drug Free										
Intake (n=845)	25.8	(2.1)	-	-	-	-	-	-	-	-
3 Months (n=266)	19.8	(1.3)	9.1	(0.7)	-	-	-	-	-	-
6 Months (n=115)	20.0	(0.6)	10.1	(0.5)	12.2	(0.4)	-	-	-	-
9 Months (n=62)	21.1	(0.9)	12.7	(0.4)	15.8	(0.4)	12.9	(0.6)	-	-
12 Months (n=37)	24.2	(0.4)	18.8	(0.5)	14.7	(0.5)	9.1	(0.5)	8.1	(0.4)

*Serious (nondrug defined) offenses are aggravated assault, robbery, burglary, theft, auto theft, forgery/embezzlement, and stolen property/fencing. All data are from a part of the form the client completes without supervision. The percentage of missing data, therefore, is large, ranging up to 15 percent on any one item.

**Total subpopulations, including those who reported as well as those who did not report committing an offense, are used as the bases for computing mean numbers of offenses.

***Data for residential programs are presented. However, the data may be confounded by changes in modality/environment after intake, the opportunity to get passes from a program and/or hesitancy to report illegal activity while in a residence.

†Mean number of offenses during specified time period.

analyses in this section, a three month (rather than a 12 month) pretreatment baseline period was examined. This shorter period was selected because it showed greater involvement in illegal activity and was, thus, felt to be a more accurate indicator of the effects of treatment in interrupting or dampening the increased criminality which may immediately precede treatment. Mean numbers of acts are shown with the percentages of clients committing one or more serious crimes in each time period to provide more precise indications of the amount of change in illegal involvement.

The extensive involvement of residential clients in serious crime was virtually eliminated while clients remained in treatment. Clients in outpatient methadone and outpatient drug free modalities have more opportunity to commit crimes during treatment and, consequently, have higher rates than those in residential programs. The mean number of serious crimes per methadone client was reduced from one a month in the three months before treatment to 0.4 a month during the first three months in treatment. For all clients staying in outpatient drug free treatment at least three months, crimes were reduced from 0.4 to 0.2 crimes a month.

For those clients who report committing serious crimes, these data suggest that the treatment experience suppresses illegal activity. However, before such an effect can be attributed to the influence of treatment, analyses must be conducted to examine the relationships more closely, to control for the effects of other variables, and to isolate treatment factors that are associated with positive results. More detailed analyses of the distributions and patterns of criminal behavior and their persistence during treatment are now being conducted.

5. Employment

If drug treatment programs have a positive effect on the clients they serve, one indicator might be a rise in full-time employment. Table XI.7 presents data on clients' employment activities for the year prior to treatment and during each three-month period they remained in treatment. As shown, the level of full-time employment increased in both outpatient methadone and outpatient drug free programs, with most notable gains in the latter. Further, most of the changes which occurred were realized by the sixth-month interview where roughly one third of the clients reported full-time work for ten weeks of the preceding three month period. Although some of the changes were small, they are encouraging nonetheless, in view of the deteriorating employment opportunities throughout 1979 for the general population.

Table XI.7 Clients Reporting Full-Time* Work At Least Seventy-five Percent of the Weeks in Treatment by Intake Modality/Environment

Intake Modality/Environment by Time in Treatment	Periods Covered in Interview				
	Year Before Treatment	Intake-Three Months	Three-Six Months	Six-Nine Months	Nine-Twelve Months
Outpatient Methadone					
Intake (n=1097)	27.4%	-	-	-	-
3 Months (n=675)	29.3	30.1%	-	-	-
6 Months (n=506)	27.8	27.8	31.0%	-	-
9 Months (n=380)	26.5	25.4	26.8	27.6%	-
12 Months (n=270)	23.8	25.4	24.3	27.4	27.4%
Residential**					
Intake (n=850)	12.2%	-	-	-	-
3 Months (n=338)	10.8	4.1%	-	-	-
6 Months (n=183)	12.8	2.2	4.4%	-	-
9 Months (n=100)	13.0	3.0	5.2	10.0%	-
12 Months (n=42)	16.7	0.0	5.0	9.5	11.9%
Outpatient Drug Free					
Intake (n=873)	23.0%	-	-	-	-
3 Months (n=268)	23.9	33.2%	-	-	-
6 Months (n=114)	25.2	32.3	33.3%	-	-
9 Months (n=63)	21.0	34.6	35.7	34.9%	-
12 Months (n=38)	18.9	29.0	32.4	32.4	23.7%

*Full-time work is defined as a self-report of working 35 or more hours a week.

**Data for residential programs are reported. However, depending on the design of the program, most clients may not have an opportunity to work outside the residence during the first six months of treatment.

XII. SUMMARY AND IMPLICATIONS

Drug abuse in the United States is a major social problem and, as such, has received the continued attention of both policymakers and researchers. Numerous studies have been directed toward understanding the nature and patterns of drug use and the effectiveness of drug abuse treatment programs. Most inquiries into treatment effectiveness, however, have been of limited scope (often focusing on individual treatment programs) and of limited generalizability due to sampling, design, and/or measurement shortcomings. The most recent comprehensive data collection on a national level took place from 1969-1973 in the Drug Abuse Reporting Program (DARP). The last DARP cohort entered treatment in 1972-73. Since then there have been rapid changes in the drug abuse problem--the nature, funding, and availability of treatment services, and the clients who seek treatment. Many questions about the background of clients who enter treatment, the nature, effects, and quality of services currently being provided and received, and the changes in behavior that occur both during and after treatment are unanswered.

Information needed by policymakers, practitioners, and researchers will be provided by the Treatment Outcome Prospective Study (TOPS). Funded by the National Institute on Drug Abuse (NIDA) in cooperation with the National Institute of Justice (NIJ), this research is aimed at providing current and timely data on treatment provided to individuals with drug problems. TOPS is a long term, large-scale longitudinal investigation of the natural history of drug abusers who have sought services in federally funded drug abuse treatment programs. This research tracks a multi-year census (1979-1981) of persons identified as eligible for treatment at selected drug treatment programs and by the Treatment Alternatives to Street Crime (TASC) programs. The 1979 TOPS admission cohort data are comprised of the responses of 3,389 treatment clients in 27 drug treatment programs in six cities. The programs included three outpatient detoxification units, eight outpatient methadone programs, seven outpatient drug free facilities and nine residential programs.

The treatment programs and individual clients have voluntarily participated in the study. Program researchers, hired and trained specifically for TOPS, were assigned to interview the clients. Demographic and baseline behavioral data were collected at the time the client sought admission to the treatment

program. At months one, three, and quarterly thereafter, for up to two years while the client remained in treatment, additional indepth assessments of behavior, attitudes, and treatment process were conducted. These assessments are being continued in the posttreatment period by followup interviews at three months, one year and two years after termination. Thus, the TOPS research program includes multi-cohort Intreatment and Followup Studies.

The data that are collected are used to:

(1) describe in detail the backgrounds and characteristics of drug abusers contacting selected treatment programs;

(2) examine variations in client behavior before, during and after treatment in the selected treatment programs;

(3) examine variations in behavior among groups of clients with selected background characteristics and experiences; and

(4) identify factors (e.g., demographic characteristics, treatment services) that explain differences and changes in major types of outcome behaviors (e.g., drug and alcohol use, mental health, criminality, employment) during and subsequent to treatment.

The overall goal of TOPS is to provide a clear understanding of the complex social, economic and behavioral factors which, combined with the treatment experience, are associated with clients developing socially productive lifestyles. Special attention is focused on the identification of factors that may be modified by state and local funding agencies and programs to provide more effective treatment services. When combined and coordinated with the results of other studies, the TOPS data will help answer many key questions about the overall effectiveness of drug treatment programs and the types and mix of treatment services that are most likely to lead to positive outcomes for particular types of clients.

This summary highlights the major findings and notes some of the implications of these results. The analyses reported provide a basic description of the characteristics and behaviors of clients in the 1979 TOPS Intreatment cohort in the year prior to treatment and during their first year in treatment but do not attempt to examine the many complexities of the data. This summary first identifies major characteristics and behaviors of the intreatment clients, then notes the major types of services needed and received and concludes with a discussion of behavior changes during treatment. From the outset the reader should be cautious of overgeneralization of these results. A more complete

examination of the relationships among client characteristics, treatment and outcome behaviors based on indepth analyses using multivariate perspectives will be available in forthcoming reports.

A. Characteristics and Behaviors

The general characteristics and behaviors of clients in the 1979 TOPS admission cohorts are similar to those of the CODAP population. However, there were many differences in client characteristics and behaviors among the four modalities/environments that must be carefully considered in assessing differential outcomes within or among the modalities/environments. Six major points emerged regarding general characteristics of the total set of clients studied in this report.

- Most clients are males, (non-Hispanic) whites, young and without high school diplomas.

A summary characterization based on modal percentages shows that most clients are males (72 percent), non-Hispanic whites (52 percent), and relatively young (71 percent are age 30 or younger; 57 percent are between 21 and 30). Fifty-one percent have less than a high school diploma (or GED). Most of the clients live in private single or multiple family dwellings (80 percent) and with members of a nuclear or extended family (58 percent).

Client characteristics differed considerably among modalities. Higher proportions of females, (non-Hispanic) whites and younger clients entered outpatient drug free programs than TOPS programs as a whole. The differences in client characteristics among modalities/ environments strongly suggest that analyses should be conducted within modality and that comparisons among modalities should be made with great care.

- The clients frequently used a variety of drugs and alcohol weekly or more often in the year prior to treatment.

Prior to treatment most clients used a variety of drugs (figure 1). Regardless of the pattern of drug use, the majority of clients used alcohol (57 percent) and marihuana (65 percent) weekly or more often. Heroin was identified most often by clients as their primary drug of abuse (43 percent). It was used weekly or more often in the year before treatment by a large majority of clients in detoxification programs (83 percent) and in outpatient methadone programs (63 percent), but less frequently in outpatient drug free (12 percent) and residential programs

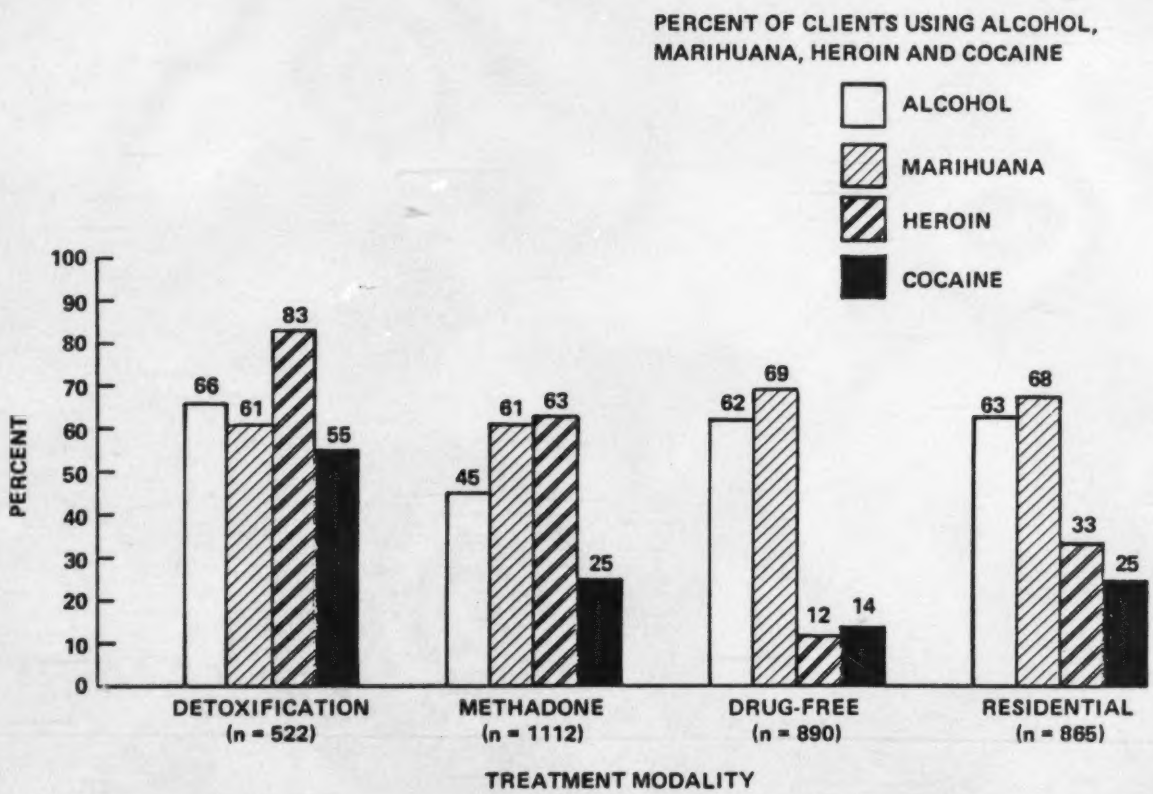


Figure 1. Weekly or more frequent use of alcohol, marihuana, heroin, and cocaine during the year before treatment.

(33 percent). Heroin users appear to have social support for their habit. Sixty-one percent of TOPS clients indicated that they lived with or were well acquainted with others who used heroin or other opiates. Whereas heroin is identified most often as the primary drug problem in detoxification, outpatient methadone and residential programs, alcohol or marihuana problems (25 percent) or no reported problem (27 percent) are most common in outpatient drug free programs. Averaged across all program modalities during the year prior to treatment, 77 percent of all clients used their primary problem drug weekly or more often and 57 percent used it daily. Comparisons found TOPS and CODAP data to be similar for primary drug use patterns, though TOPS had a higher proportion of primary heroin and other narcotics users and a lower proportion of primary marihuana users.

In addition to the drug identified as the primary problem drug, other drugs are frequently and regularly used. The TOPS data show far greater multiple drug use than do the DARP data for 1969-1973. Patterns of multiple use cannot be fully described using CODAP admission data because the forms limit reporting to three drugs for any individual client. TOPS intake data offer the opportunity to assess the full scope of lifetime, past year and past three months multiple substance use. These findings from TOPS on drug use patterns have important implications for treatment outcome, especially posttreatment drug usage patterns and the appropriate selection and utilization of treatment services.

- A large proportion of the clients previously participated in drug treatment. Referral sources for treatment vary by modality.

Sixty percent of TOPS clients had a previous drug treatment experience although there are notable differences in this pattern among modalities. Approximately three-fourths of the clients in detoxification and and outpatient methadone programs had been in treatment previously (76 percent and 69 percent, respectively) compared to 37 percent in outpatient drug free and 53 percent in residential programs. Fifty-four percent of clients who reported prior experience indicated they had received services in more than one modality. For detoxification programs and outpatient methadone programs, clients are primarily self referred (about 51 percent) or referred by family or friends (about 32 percent). In contrast, the criminal justice system is the most frequent source of referral for

residential programs (35 percent) and outpatient drug free programs (28 percent). The differences in referral sources suggest differences in motivations for entering programs. These motivational differences may have important effects on retention and services received.

- A large proportion of the clients report indicators of depression.

Sixty percent of the TOPS clients reported one or more depressive symptoms in the year before treatment. One of seven clients in outpatient drug free and residential programs reported a suicide attempt in the year prior to treatment. Despite the evidence of mental health problems, less than one in four clients had ever received mental health treatment. The scope of mental health problems and the absence of prior treatment suggests that drug treatment programs are an important locus for mental health services either in the program or through referral.

- Many clients are involved in illegal activity and in the criminal justice system.

Considerable illegal activity was reported in the year prior to treatment and involvement with the criminal justice system was common. Overall 81 percent indicated ever being arrested, and 44 percent admitted an arrest during the year prior to treatment. Illegal activity varied by modality. Arrests for all offenses (figure 2) were highest among residential clients (69 percent) followed by outpatient drug free clients (43 percent), detoxification clients (31 percent), and outpatient methadone clients (30 percent). Overall about one third of the clients were under criminal justice system supervision when they entered treatment (e.g., on probation or parole), but this varies considerably across modalities (residential, 60 percent; outpatient drug free, 39 percent; detoxification, 14 percent; outpatient methadone, 16 percent). This variation among modalities is not surprising, given that residential programs and outpatient drug free programs receive most of the referrals from the criminal justice system. Residential drug treatment may serve as a transition phase back into society for criminal justice clients with drug related problems.

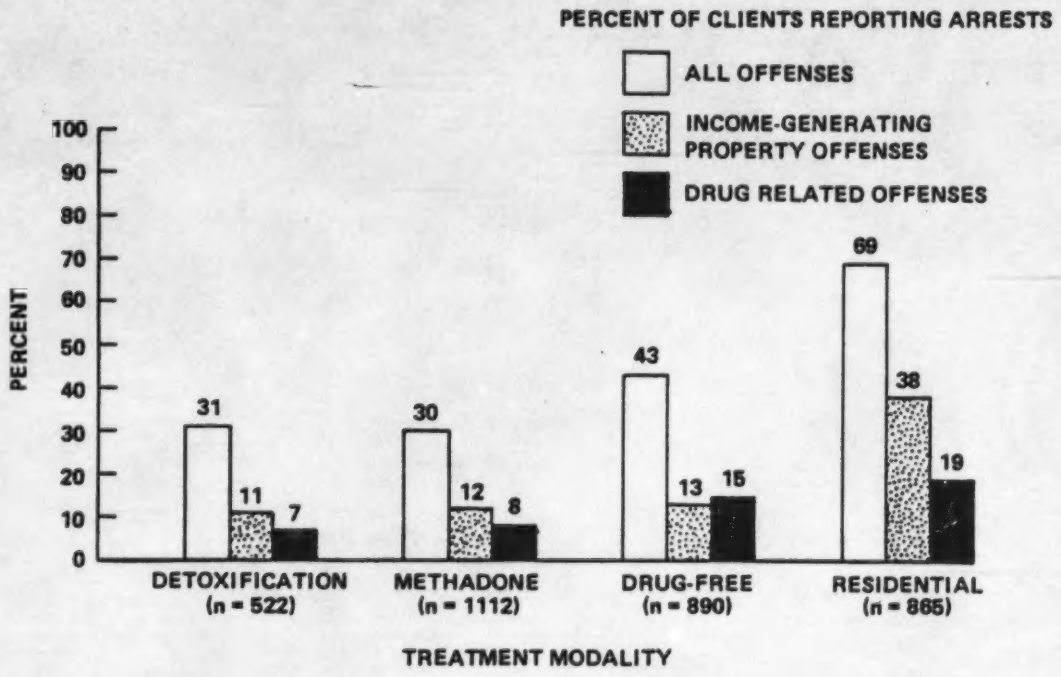


Figure 2. Self reported arrests during year before treatment for all offenses, income-generating property offenses, and drug-related offenses.

- The clients have not been successful in finding and keeping jobs.

Although some clients, particularly those in outpatient methadone programs, report consistent employment, employment levels were generally low. Overall 12 percent of clients reported full time employment during the entire 52 weeks prior to treatment; another 10 percent reported full time work for at least 40 weeks. One in four clients reported being employed in the week prior to entering treatment. Forty-three percent of clients reported that their jobs provided their greatest source of income compared to 27 percent who reported illegal sources as greatest. While some proportion of drug abusers can and do work, the need for vocational and employment services is evident.

B. Services Needed and Received

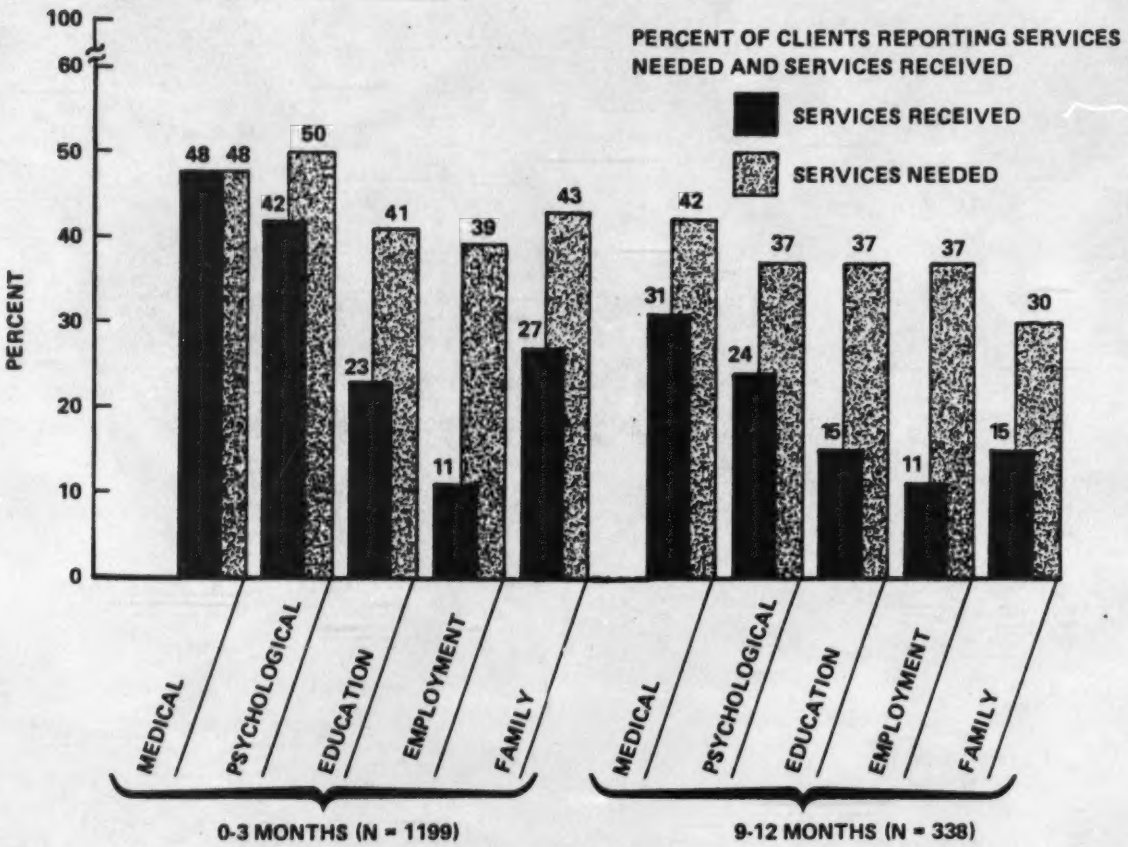
Clients were asked about their problems, service needs and treatment provided by programs in a number of areas. The results of these analyses are summarized in three basic points.

- Clients had a variety of drug related problems and service needs.

  TOPS clients entering drug treatment programs indicated a variety of problems related to drug use. These included medical, psychological, family, legal, job/employment and financial problems . Many clients reported that these problems were very severe immediately prior to treatment and reported needs for services in these areas throughout treatment. About 40 to 50 percent of clients reported such service needs at one month in treatment and roughly a third still reported similar needs after 12 months in treatment (figure 3). Differences occurred among modalities with residential clients generally reporting the greatest need for services throughout treatment. These data suggest that programs should provide the kinds and amount of services that match clients' service needs.

- Clients received a variety of services.

  Clients reported receiving a variety of services throughout treatment. Medical, psychological, and family related services were received most often (see figure 3). In general the percentages of clients receiving services were considerably lower than the percentages of clients reporting service needs. The greatest discrepancies between services perceived as needed and services received were in the areas of finances, employment, and education. This pattern is not surprising since these are difficult and costly areas in which to render service. Employment and education services, however, may have the greatest long-term benefits.



NOTE: Data are aggregated across all treatment modalities.

Figure 3. Percentage of clients reporting services needed and services received during treatment.

- Clients generally were satisfied with treatment received.

Overall clients were rather uniformly satisfied with the treatment they received for drug abuse regardless of the length of treatment. About half expressed high satisfaction with their treatment for drug use at each intreatment interview point. Clients' evaluations of help with problems other than drug abuse were also generally positive. High percentages of residential clients reported they had been helped very much with problems other than drug abuse (55 percent at three months and 74 percent at twelve months). Fewer outpatient drug free and outpatient methadone clients reported this degree of satisfaction -- comparable rates for these client groups being 43 percent and 50 percent; and 28 percent and 25 percent, respectively. In general, it appears that programs are perceived as helpful not only with drug abuse problems but also in a variety of other areas.

C. Behavior During Treatment

Various major behaviors during treatment were examined and compared with pretreatment behaviors. Six major points can be made about these analyses.

- Retention varied among types of clients and modalities/environments.

The lengths of time clients continued treatment differed among modalities (figure 4). Outpatient drug free and residential programs had far higher percentages of clients who stayed a month or less (37 percent and 32 percent, respectively) than outpatient methadone programs (14 percent). Six months after admission, only 17 percent of the outpatient drug free clients and 22 percent of the residential clients remained in the TOPS treatment program though more than half the outpatient methadone clients remained. Retention patterns varied considerably by subgroupings such as sex and age, legal status at admission, depression indicators, and primary problem drug.

Length of time in treatment has been shown in many studies to be an important predictor of treatment effectiveness, and it is probably correctly assumed that a minimum time is required for treatment services to be effective. It is probably also true that there is an optimal length of time in which treatment will be most effective for an individual or type of client.

Short stays in treatment are not necessarily ineffective nor are long stays a guarantee of reform. More refined analyses giving consideration to the exact nature of treatment and client characteristics as well as the sheer length of treatment need to be made before the relationship of retention to treatment effectiveness can be more exactly defined.

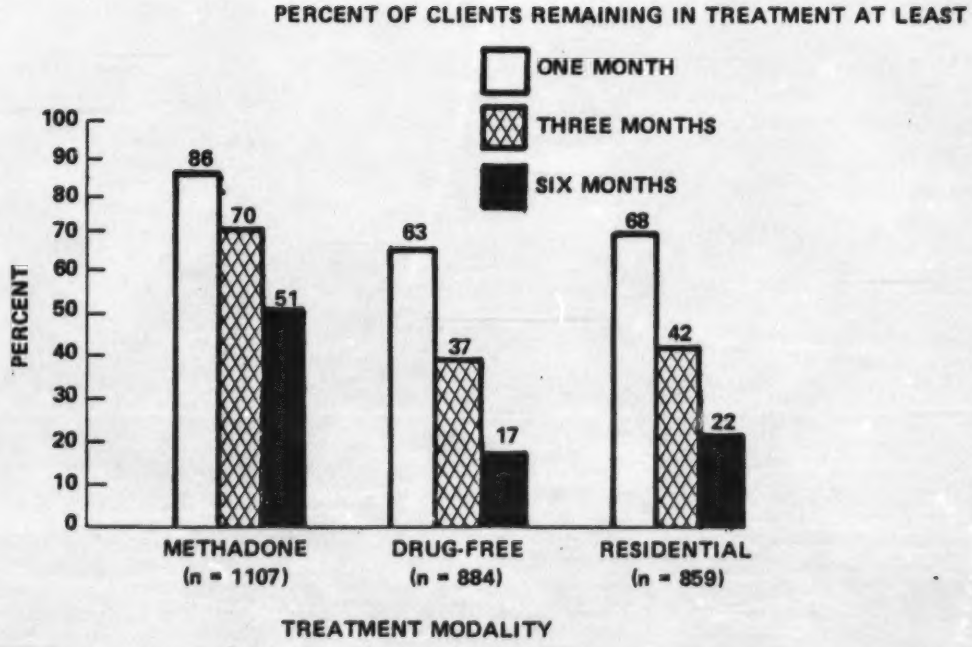
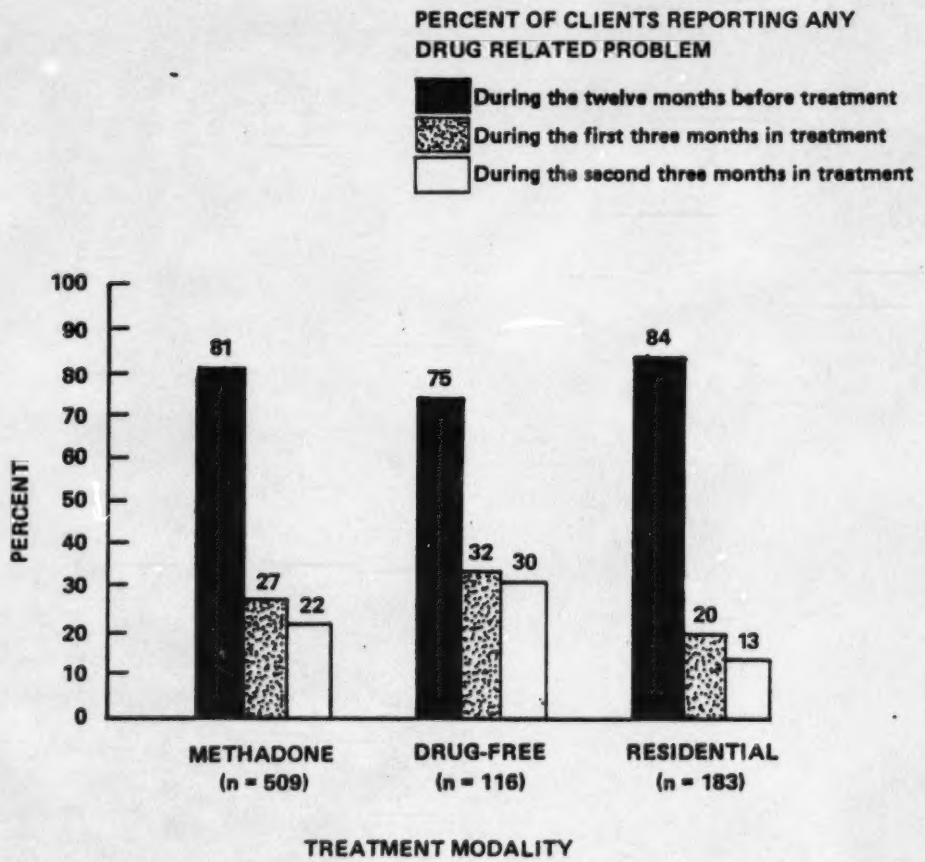


Figure 4. Months clients remained in treatment.

- Drug related problems were substantially reduced during treatment.

Drug treatment appears to have a clear effect of reducing clients' drug related problems (figure 5). Generally, as the length of treatment increased, the percentage of clients reporting drug related problems decreased. This indicator may be the best evidence that treatment programs are having a positive impact because it indicates that drug use, although not necessarily eliminated, is interfering less with a client's ability to function in a variety of areas.



Note: Problems include medical, psychological, family, legal, job/education, and financial difficulties.

Figure 5. Drug-related problems before and during treatment for clients remaining in treatment at least six months.

- Drug use decreased substantially during treatment.

Although drug use did not disappear, weekly or greater use of the primary problem drug was substantially lower during treatment (figure 6). The major change in primary drug use was observed during the first three months. Despite the reduction in drug use, alcohol and marihuana were used during outpatient methadone and outpatient drug free treatment. Daily alcohol use was reported by almost one of five outpatient methadone clients and one of four outpatient drug free clients.

- Serious illegal activity declines during treatment.

Clients reported fewer serious nondrug crimes such as assault, robbery, burglary, and theft after three months of treatment than during the three months before treatment. Residential clients reported the greatest changes, shifting from a mean of six crimes during the pretreatment period for all clients entering the programs to a mean of 0.1 for those remaining in these restricted environments at least three months. Outpatient methadone clients reported only one third as many crimes in the first three months in treatment as before treatment. The means for outpatient drug free clients did not decline as steeply, and a low, steady rate of illegal activity persisted throughout treatment.

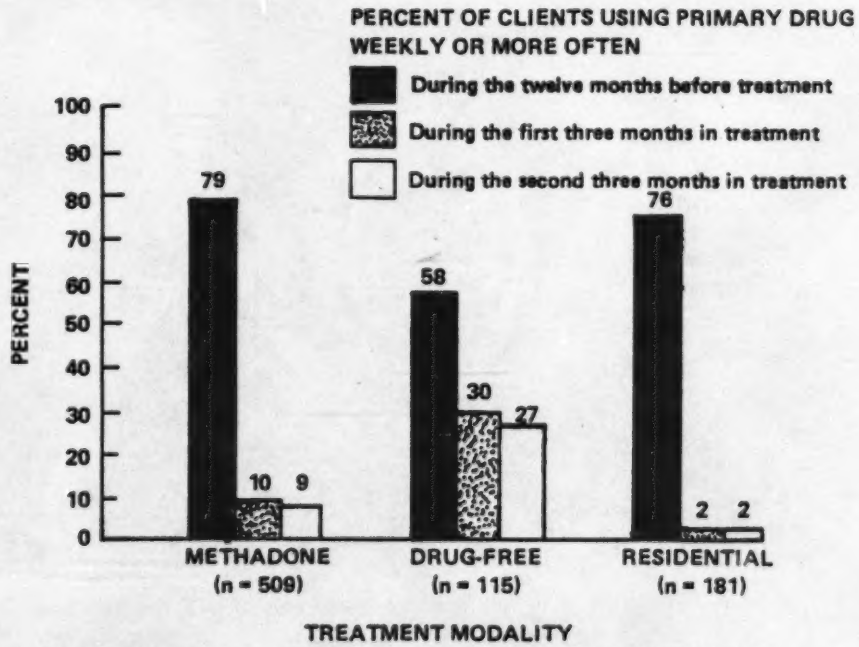


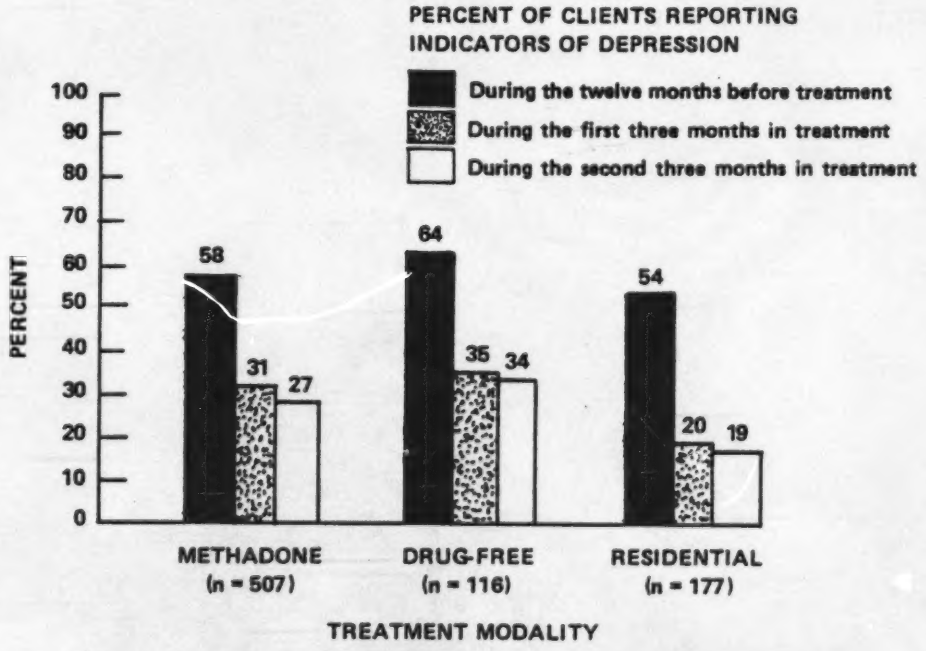
Figure 6. Weekly or greater use of primary drug before and during treatment for clients remaining in treatment at least six months.

- Depression was reduced during treatment.

The percentage of clients reporting indicators of depression decreased to roughly one-half of pretreatment levels during the first three months of treatment (figure 7). This was the largest reduction of any single three month period. Residential clients reported the lowest pretreatment and intreatment levels of depression.

- Full time employment increased somewhat during treatment.

The percentage of clients reporting full time work increased from about 25 percent in the year before treatment to 35 percent during the first three months of treatment in outpatient drug free programs. In outpatient methadone, approximately one-fourth of the clients reported full time work both before and during treatment.



Note: Indicators of depression include feeling so depressed that client could not get out of bed, suicidal thoughts and suicide attempts.

Figure 7. Indicators of depression before and during treatment for clients remaining in treatment at least six months.

D. Future Directions

This report summarizes early descriptions of the characteristics and the behaviors before and during treatment of clients who entered TOPS programs in 1979. The analyses conducted, while purposely straightforward and simple, are a vital step in the overall TOPS analyses plan. The data presented give a clear, basic picture of the characteristics and behaviors of TOPS clients and provide the foundation for more detailed multivariate analyses to better identify the effects of treatment. Such analyses are now underway and will be reported in a forthcoming series of annual and special issue reports on TOPS and in a comprehensive final report upon completion of the study. These analyses involve major efforts in four areas described below.

- Develop measures and approaches to analysis.

  Work is in progress to select and develop appropriate and useful measures of the key outcome and explanatory variables. Special attention is being focused on developing a summary measure of drug use involvement. The validity and reliability of the measures and methods of controlling for possible alternative explanatory factors, such as limited time at risk, are being reviewed. Major analytical subgroups defined by client characteristics such as sex and age, primary drug of abuse, severity of drug abuse, or criminal justice status are being considered in order to identify types of clients who may behave differently in certain types of treatment.

- Examine multivariate relationships and explanatory models.

  Detailed multivariate analyses are being coordinated to assess the relationships among the various client characteristics, behaviors and treatments. These analyses have multiple purposes including (1) studying specific outcome behaviors (alcohol use, drug use, illegal activity, depression, employment) in detail, (2) developing and testing multivariate explanatory models of treatment outcome for different types of clients receiving various kinds of treatment services, and (3) summarizing results into a general framework for the assessment of the effectiveness of treatment services for different types of clients in different treatment settings.

- Assess the impacts of treatment process on treatment outcomes.

  One feature of the TOPS research is the detailed assessment of treatment process. A special study is being conducted to identify, describe, and quantify various dimensions of treatment process in the TOPS drug treatment programs. When available, the measures generated in this special study can be integrated into the overall TOPS analysis of the major outcome variables during and after treatment. The characteristics of treatment programs and services are being appended to individual client records and can be included as covariates in multivariate analyses.

- Expand the analysis to additional cohorts and the followup data.

  Two major additional data sources, (1) the 1980 and 1981 intreatment study admission cohorts and (2) the followup sample for cohorts, will be available to expand the initial developmental work with the before and during treatment data on the 1979 admission cohort. Analyses of the 1979 cohort are being replicated with the 1980 and 1981 admission cohorts to determine the stability and generalizability of findings for the larger sample of programs and cities included in the 1980 and 1981 data collections. Followup data for each admission cohort will allow the examination of behaviors at various times after treatment. In addition to describing treatment outcomes after termination, we will judge whether the same factors that are related to client behavior during treatment are also related to post-treatment behaviors. The models of treatment outcome will be revised and expanded as needed to incorporate the results of the Followup Study.

The end product of the various annual and special issue reports will be a comprehensive and systematic report of the nature and correlates of treatment outcomes. While the primary purpose of TOPS is to describe the characteristics and behaviors during and after treatment of cohorts of drug abusers contacting the TOPS program, attempts will be made to understand differences in behaviors among clients with different backgrounds, receiving different types of treatment services and facing different community environments. Efforts will be made to develop models of client behavior which encompass the many individual and environmental factors that may influence behavior. Special

attention will be directed toward describing factors in treatment and client characteristics that suggest client and program matches that maximize prosocial levels of behavior during and after leaving drug treatment. The nature of the data and reports generated from the TOPS study are designed to provide useful information for policymakers and program managers in their efforts to provide more effective and efficient drug treatment services.

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